# REVISION HISTORY BG3R CHASSIS

MODEL

*KV-XA21M81*

PART NO.: 9-872-331-01

| NO. | SUFFIX | DATE | SUPPL. / CORR | DESCRIPTION |
|---|---|---|---|---|
| 1 | -01 | 2002/8 | -- | 1st. Issue |
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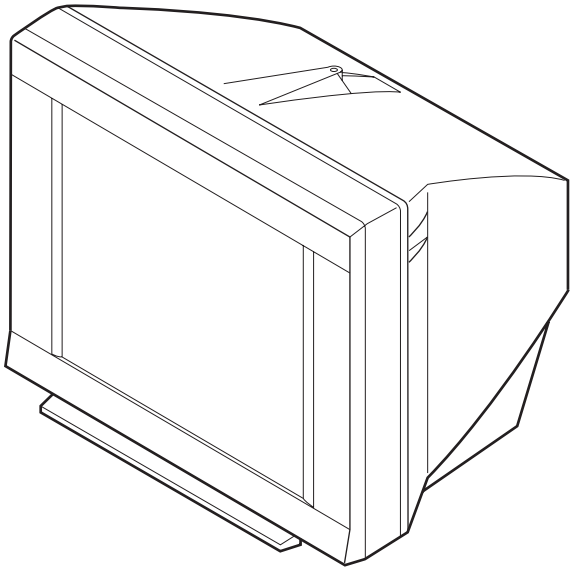
Self Diagnosis
Supported model

# SERVICE MANUAL BG3R CHASSIS

| MODEL | COMMANDER | DEST. | CHASSIS NO. |
|---|---|---|---|
| KV-XA21M81 | RM-952 | ME | SCC-U48R-A |

| MODEL | COMMANDER | DEST. | CHASSIS NO. |
|---|---|---|---|



TRINITRON® COLOR TV

SONY®

## SPECIFICATIONS

| | | | Note |
|---|---|---|---|
| **Power requirements** | 110-240 V AC, 50/60 Hz | | |
| **Power consumption (W)** | Indicated on the rear of the TV | | |
| **Television system** | B/G, I, D/K, M | | |
| **Color system** | PAL, PAL 60, SECAM, NTSC3.58, NTSC4.43 | | |
| **Teletext Language** | English, Farsi(Persian), French | | |
| **Channel coverage** | | | |
| **B/G** | VHF: E2 to E12 / UHF: E21 to E69 /<br>CATV: S01 to S03, S1 to S41 | | |
| **I** | UHF: B21 to B68, CATV: S01 to S03, S1 to S41 | | |
| **D/K** | VHF: C1 to C12, R1 to R12 / UHF: C13 to C57, R21 to R60 /<br>CATV: S01 to S03, S1 to S41, Z1 to Z39 | | |
| **M** | VHF: A2 to A13 / UHF: A14 to A79 /<br>CATV: A-8 to A-2, A to W+4, W+6 to W+84 | | |
| **┐┌ (Antenna)** | 75-ohm external terminal | | |
| **Audio output (Speaker)** | 5W + 5W | | |
| **Number of terminal** | | | |
| **Video** | Input: 2 Output: 1 | Phono jacks; 1 $V_{P-P}$, 75 ohms | |
| **♪ Audio** | Input: 2 Output: 1 | Phono jacks; 500 mVrms | |
| **(Headphone)** | Output: 1 | Stereo minijack | |
| **Picture tube** | 21 in. | | |
| **Tube size (cm)** | 54 | | Measured diagonally |
| **Screen size (cm)** | 51 | | Measured diagonally |
| **Dimension (w/h/d, mm)** | 620 x 452 x 496 | | |
| **Mass (kg)** | 26 | | |

Design and specifications are subject to change without notice.

**CAUTION**

**SHORT CIRCUIT THE ANODE OF THE PICTURE TUBE AND THE ANODE CAP TO THE METAL CHASSIS, CRT SHIELD, OR CARBON PAINTED ON THE CRT, AFTER REMOVING THE ANODE.**

**SAFETY-RELATED COMPONENT WARNING!!**

**COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.**

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# SELF DIAGNOSTIC FUNCTION

The units in this manual contain a self-diagnostic function. If an error occurs, the STANDBY/TIMER lamp will automatically begin to flash.
The number of times the lamp flashes translates to a probable source of the problem. A definition of the STANDBY/TIMER lamp flash indicators is listed in the instruction manual for the user's knowledge and reference. If an error symptom cannot be reproduced, the remote commander can be used to review the failure occurrence data stored in memory to reveal past problems and how often these problems occur.

## 1. DIAGNOSTIC TEST INDICATORS

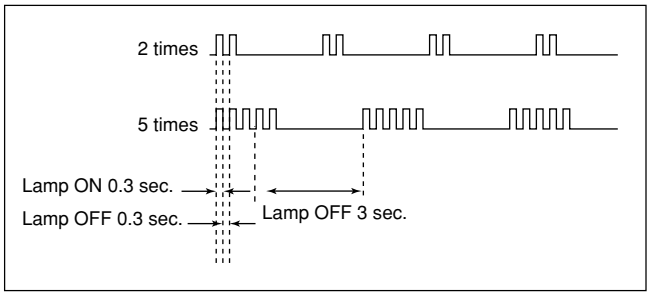
When an errors occurs, the STANDBY/TIMER lamp will flash a set number of times to indicate the possible cause of the problem. If there is more than one error, the lamp will identify the first of the problem areas.

Result for all of the following diagnostic items are displayed on screen. No error has occured if the screen displays a "0".

| Diagnostic Item Description | No. of times STANDBY/TIMER lamp flashes | Self-diagnostic display/Diagnostic result | Probable Cause Location | Detected Symptoms |
|---|---|---|---|---|
| • Power does not turn on | Does not light | — | • Power cord is not plugged in.<br>• Fuse is burned out F4601 (F) | • Power does not come on.<br>• No power is supplied to the TV.<br>• AC power supply is faulty. |
| • +B overcurrent (OCP) or overvoltage (OVP)<br>• Vertical deflection stopped<br>• Horizontal deflection overdrive | 2 times | 002:000 or<br>002:001~255<br>003:001~255<br>004:001~255<br>at the same time | • H.OUT Q511 is shorted. (A board)<br>• IC700 is shorted (C1 board)<br>• -13V is not supplied. (A board)<br>• IC 503 faulty (A board) | • Power does not come on.<br>• Load on power line is shorted.<br>• Has entered standby state after horizontal raster.<br>• Vertical deflection pulse is stopped.<br>• Power line is shorted or power supply is stopped. |
| • White balance failure (no PICTURE) | 5 times | 005:000 or<br>005:001~225 | • G2 is improperly adjusted. (Note 2)<br>• CRT problem.<br>• IC700 out is faulty (C1 board)<br>• IC301 is faulty. (A board)<br>• No connection A board to C1 board. | • No raster is generated.<br>• CRT cathode current detection reference pulse output is small. |
| • Micro reset | — | 101:00 or<br>101:001~225 | • Discharge CRT (C1 Board)<br>• Static discharge<br>• External noise | • Power is shut down shortly, after this return back to normal.<br>• Detect Micro latch up. |

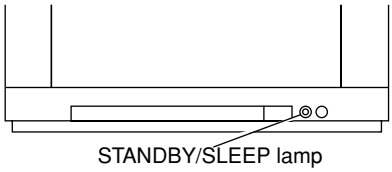
Note 1: If a + B overcurrent is detected, stoppage of the vertical deflection is detected simultaneously.
The symptom that is diagnosed first by the microcontroller is displayed on the screen.
Note 2: Refer to screen (G2) Adjustment in section 3-4 of this manual.
* IC700 out is faulty (C1 board).

## 2. DISPLAY OF STANDBY/TIMER LIGHT FLASH COUNT




| Diagnostic Item | Flash Count* |
|---|---|
| +B overcurrent/overvoltage<br>Vertical deflection stopped | 2 times |
| White balance failure | 5 times |

* One flash count is not used for self-diagnostic.




## 3. STOPPING THE STANDBY/TIMER FLASH

Turn off the power switch on the TV main unit or unplug the power cord from the outlet to stop the STANDBY/TIMER lamp from flashing.

## 4. SELF-DIAGNOSTIC SCREEN DISPLAY

For errors with symptoms such as “power sometimes shuts off” or “screen sometimes goes out” that cannot be confirmed, it is possible to bring up past occurances of failure for confirmation on the screen:

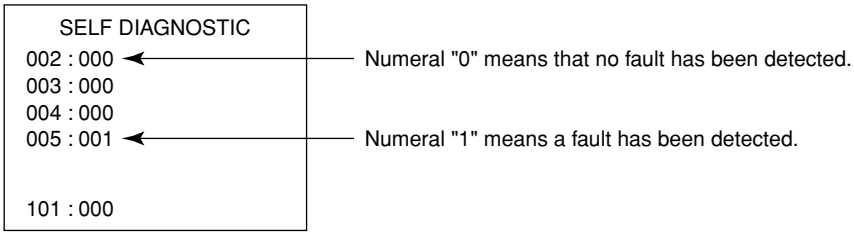
**[To Bring Up Screen Test]**
In standby mode, press buttons on the remote commander sequentially in rapid succession as shown below:

Screen display ➡ channel 5 ➡ Sound volume - ➡ Power ON

⇧

Note that this differs from entering the service mode (mode volume +).

**Self-Diagnosis screen display**


SELF DIAGNOSTIC
002 : 000
003 : 000
004 : 000
005 : 001
101 : 000
Numeral "0" means that no fault has been detected.
Numeral "1" means a fault has been detected.

## 5. HANDLING OF SELF-DIAGNOSTIC SCREEN DISPLAY

Since the diagnostic results displayed on the screen are not automatically cleared, always check the self-diagnostic screen during repairs. When you have completed the repairs, clear the result display to “0”.

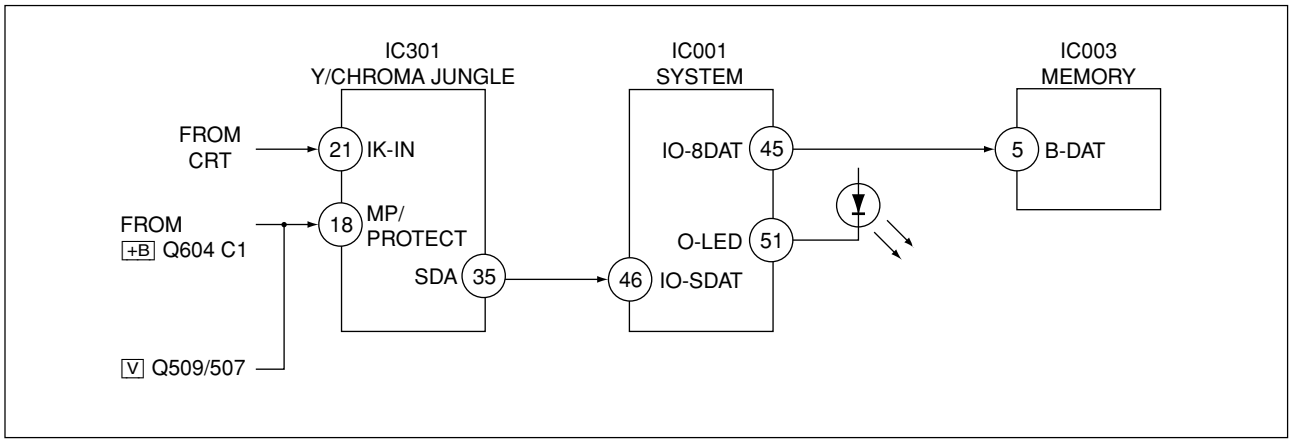
Unless the result display is cleared to “0”, the self-diagnostic function will not be able to detect subsequent faults after completion of the repairs.

**[Clearing the result display]**
To clear the result display to “0”, press buttons on the remote commander sequentially as shown below when the diagnostic screen is being displayed.

Channel [8] ➡ 0

**[Quitting Self-diagnostic screen]**
To quit the entire self-diagnostic screen, turn off the power switch on the remote commander or the main unit.

## 6. SELF-DIAGNOSTIC CIRCUIT




| | |
|---|---|
| +B overcurrent (OCP) | Occurs when an overcurrent on the +B(135) line is detected by Q604. If Q604 go to ON and the voltage to pin 18 of IC301 should go down when V.SYNC is more than seven verticals in a period, the unit will automatically turn off. |
| Vertical deflection stopped | Occurs when an absence of the vertical deflection pulse is detected by Q509 and IC001 shut down the power supply. |
| Vertical deflection overcurrent | Occurs when an overcurrent on V drive line is detected by Q507. Power supply will be shut down when detect this by IC001. |
| White balance failure | If the RGB levels* do not balance or become low level within 5 seconds, this error will be detected by IC301. TV will stay on, but there will be no picture.<br><br>* (Refers to the RGB levels of the AKB detection Ref pulse that detects IK.) |

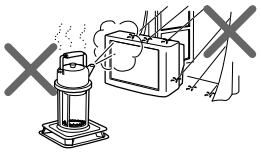
**The operating instruction mentioned here are partial abstracts from the Operating Instruction Manual. The page numbers of the Operating Instruction Manual remain as in the manual.**

# WARNING

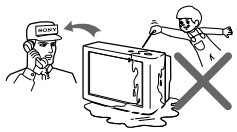
- Dangerously high voltages are present inside the TV.
- Operate the TV only between 110 – 240 V AC.

For your own safety, do not touch any part of the TV, the power cord and the antenna cable during lightning storms.

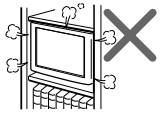
For children's safety, do not leave children alone with the TV. Do not allow children to climb onto it.



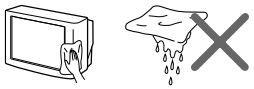
To prevent fire or shock hazard, do not expose the TV to rain or moisture.



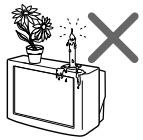
Do not operate the TV if any liquid or solid object falls into it. Have it checked immediately by qualified personnel only.



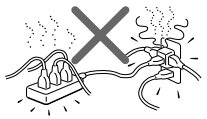
Do not block the ventilation openings of the TV. Do not install the TV in a confined space, such as a bookcase or built-in cabinet.



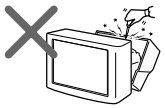
Clean the TV with a dry and soft cloth.
Do not use benzine, thinner, or any other chemicals to clean the TV. Do not scratch the picture tube.



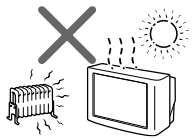
Do not place any objects on the TV.



Do not plug in too many appliances to the same power socket. Do not damage the power cord.



Do not open the cabinet and the rear cover of the TV as high voltages and other hazards are present inside the TV. Refer servicing and disposal of the TV to qualified personnel.



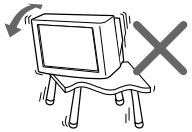
Your TV is recommended for home use only.
Do not use the TV in any vehicle or where it may be subject to excessive dust, heat, moisture or vibrations.



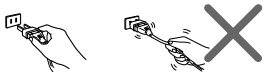


# SECTION 1
# GENERAL

***WARNING (continued)***



Install the TV on a stable TV stand and floor which can support the TV set weight. Ensure that the TV stand surface is flat and its area is larger than the bottom area of the TV.



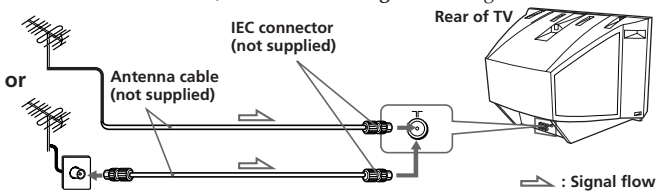
Pull the power cord out by the plug. Do not pull the power cord itself. Even if your TV is turned off, it is still connected to the AC power source (mains) as long as the power cord is plugged in. Unplug the TV before moving it or if you are not going to use it for several days.

# Getting Started

## Step 1

### Connect the antenna

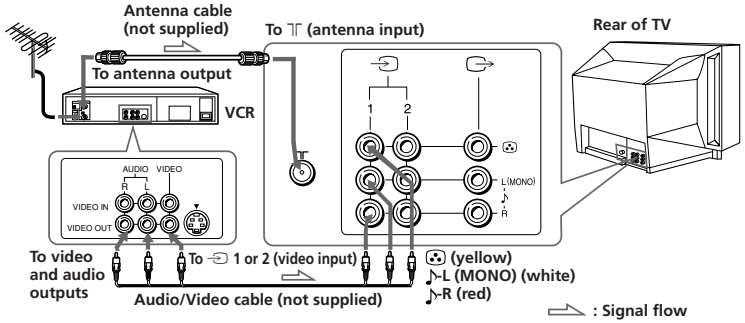
If you wish to connect a VCR, see the **Connecting a VCR** diagram below.



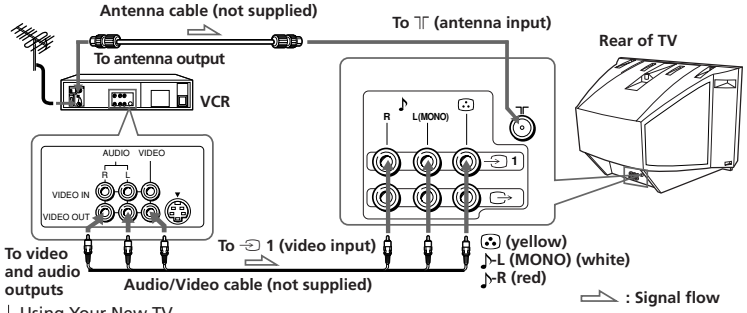

### Connecting a VCR

To watch the video input, press ⊖ (see page 14).

**KV-XG29M81/XG29M80/XG25M80**




**KV-XA21M85/XA21M83/XA21M81/XA21M80**










**Notes**

- If you connect a monaural VCR, connect the yellow plug to ⊖ (the yellow jack) and the black plug to ♪-L (MONO) (the white jack).
- If you connect a VCR to the ⅂ (antenna) terminal, preset the signal output from the VCR to the program number 0 on the TV.
- When no signal is input from the connected video equipment, the TV screen becomes blue.

*KV-XG29M81/XG29M80/XG25M80 only*

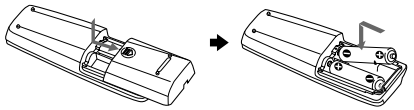
- Do not connect video equipment to the ⊖ 2 (video input) jacks at the front and the rear of your TV at the same time; otherwise the picture will not be displayed properly on the screen.

**CAUTION**

- Do not connect the power cord until you have completed making all other connections; otherwise a minimum leakage current might flow through the antenna and other terminals to ground.
- To avoid battery leakage and damage to the remote, remove the batteries from the remote if you are not going to use it for several days. If any liquid that leaks from the batteries touches you, immediately wash it away with water.

## Step 2

### Insert the batteries into the remote

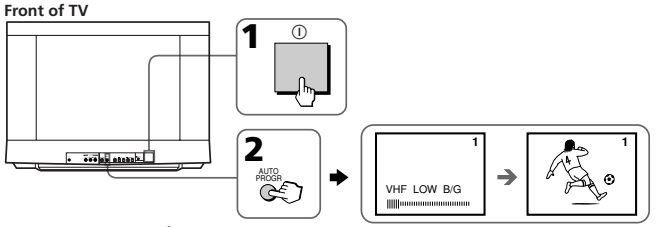


**Note**

- Do not use old batteries nor use different types of batteries together.

## Step 3

### Preset the channels automatically




**Tips**

- If you want to stop automatic channel presetting, press SELECT twice.
- If your TV has preset an unwanted channel or cannot preset a particular channel, then preset your TV manually (see page 11).

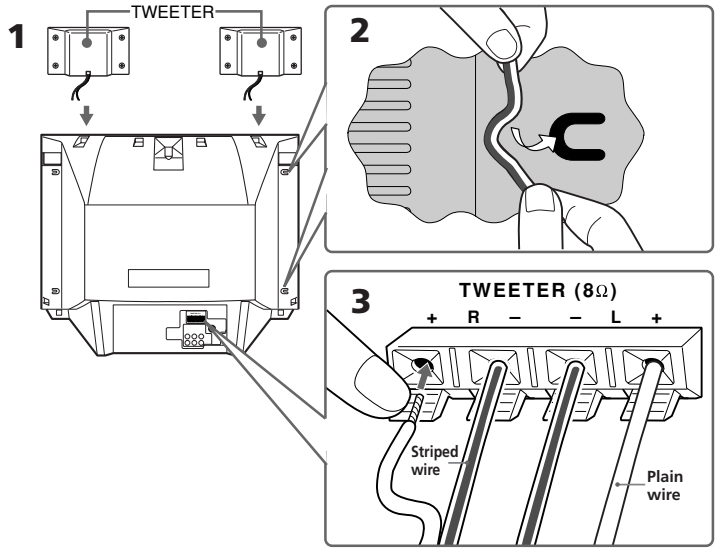
**Note**

- During automatic channel presetting, your TV screen will indicate "B/G" , "I", "D/K" or "M" for the TV system (TV SYS).

# Connecting the TWEETER

**(KV-XA21M85/XA21M83 only) (Not used for this model)**

You can enjoy high quality sound by connecting the TWEETER.




**1** Place the TWEETER on top of your TV.

**2** Bend the wire to hook it at the side of your TV.

**3** Connect the wires to the TWEETER (8Ω) terminals at the rear of your TV. The plain wire should be connected to the ⊕ red terminal and the striped wire to the ⊖ black terminal.

**Notes**

- Connect only the supplied TWEETER; otherwise your TV may malfunction.
- Unplug your TV from the wall outlet when connecting the TWEETER.
- To prevent a malfunction caused by a short circuit of the terminals, make sure that none of the TWEETER wire strands stick out, making contact with the neighbouring TWEETER terminal.





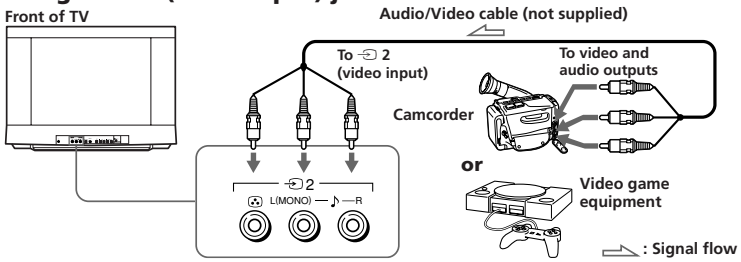
# Connecting optional components



You can connect optional audio/video components, such as a VCR, multi disc player, camcorder, video game or stereo system.

To watch the video input of the connected equipment, press ⊖ (see page 14).

## Connecting a camcorder/video game equipment using the ⊖ (video input) jacks




**Notes**

*KV-XA21M85/XA21M83/XA21M81/XA21M80 only*

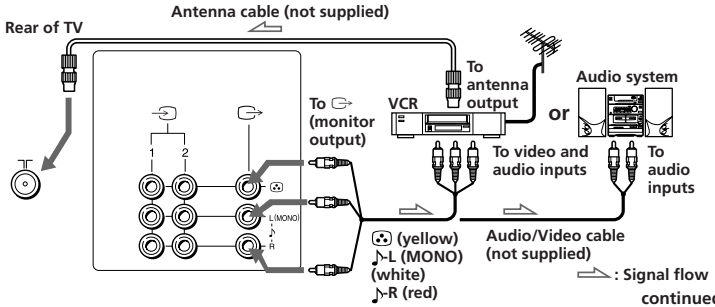
- You can also connect video equipment to the ⊖ 1 (video input) jack at the rear of your TV.

*KV-XG29M81/XG29M80/ XG25M80 only*

- You can also connect video equipment to the ⊖ 1 or 2 (video input) jacks at the rear of your TV.
- Do not connect video equipment to the ⊖ 2 (video input) jacks at the front and the rear of your TV at the same time; otherwise the picture will not be displayed properly on the screen.

## Connecting audio/video equipment using the ⊕ (monitor output) jacks

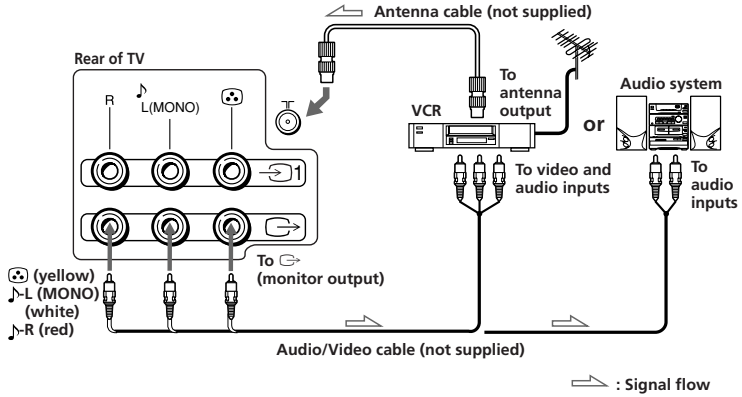
### KV-XG29M81/XG29M80/XG25M80




continued

## *Connecting optional components (continued)*

**KV-XA21M85/XA21M83/XA21M81/XA21M80**




**Note**

- If you connect a monaural VCR, connect the yellow plug to (the yellow jack) and the black plug to L (MONO) (the white jack).





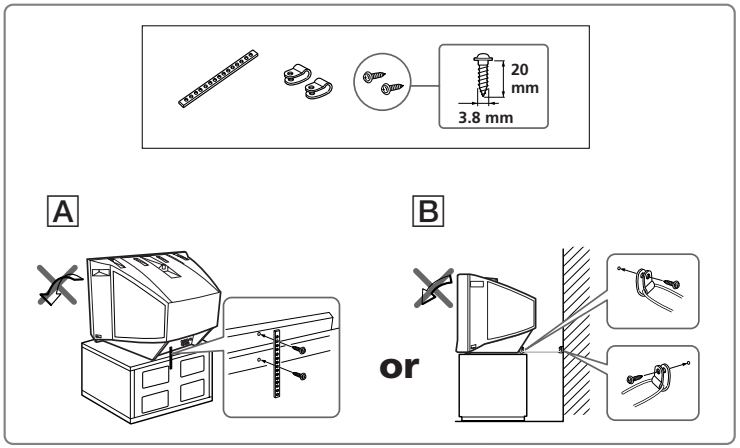
# Securing the TV

To prevent the TV from falling, secure the TV using one of the following methods:

A With the supplied screws, attach the band to the TV stand and to the rear of the TV using the provided hole.

**or**

B Put the cord or chain through the clamps to secure the TV against a wall or pillar.

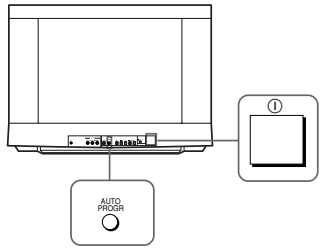


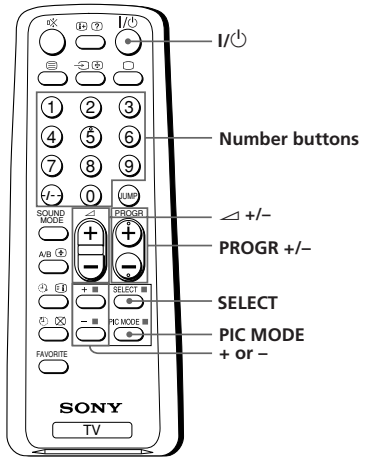

**Note**

- Use only the supplied screws. Use of other screws may damage the TV.

# Presetting channels

You can preset up to 100 TV channels in numerical sequence from program number 1 using the remote and the buttons on your TV as well.




## Presetting channels automatically

**1** Press ⏻ to turn on the TV.

**2** Press AUTO PROGR.

**Note**

- During automatic channel presetting, your TV screen will indicate "B/G", "I", "D/K" or "M" for the TV system (TV SYS).

### To preset channels automatically from a specified program number

(1) Press SELECT until "AUTO PROGRAM" appears.

(2) Press + or – to enter the "AUTO PROGRAM" mode.
The on-screen display will start flashing.

(3) Press PROGR +/– or the number buttons until the desired program number appears.

(4) Press + or – to start presetting channels automatically.

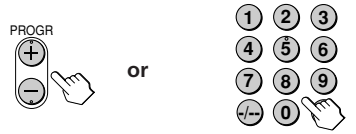


## Presetting channels manually

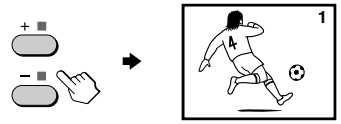
**1** Press SELECT until "MANUAL PROGRAM" appears.

**2** Press + or – to enter the "MANUAL PROGRAM" mode.

**3** Press PROGR +/– or the number buttons until the desired program number appears.




**4** Press + or – until the desired channel picture appears.

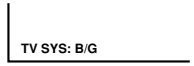



**5** Press SELECT to exit the "MANUAL PROGRAM" mode.

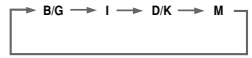
### To change the TV system setting

If the picture or sound is abnormal when receiving programs through the ⅂ (antenna input) terminal

(1) Press SELECT until "TV SYS" appears.




(2) Press + or – to select the appropriate TV system until the picture or sound quality is optimal.




continued







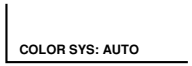
KV-XA21M81
RM-952

***Presetting channels (continued)***

### To change the color system setting

If the color is abnormal when receiving programs through the ⊤ (antenna input) terminal or the ⇨ (video input) jack.

(1) Press SELECT until "COLOR SYS" appears.




(2) Press + or – to select the appropriate color system until the color is optimal.

**Tip**

- Normally set "COLOR SYS" to "AUTO".

## Skipping program numbers

**1** Press PROGR +/– or the number buttons until the unused or unwanted program number appears.

**2** Press SELECT until "MANUAL PROGRAM" appears.

**3** Press + or – to enter the "MANUAL PROGRAM" mode.

**4** Press PIC MODE.

**5** Press SELECT to exit the "MANUAL PROGRAM" mode.

### To restore the skipped program number again

Preset the channel automatically or manually.

**Tip**

- You can also use SELECT and ◿ +/– on the TV to preset channels and skip program numbers.

### To use the fine tuning (FINE) function

The fine tuning (FINE) function may help to reduce the following problems: incomplete Teletext display (KV-XG29M81/XA21M85/XA21M81 only), double images and lines moving across the TV screen.

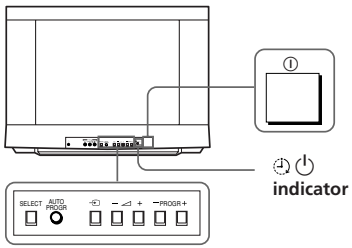
You can use the fine tuning function as below:

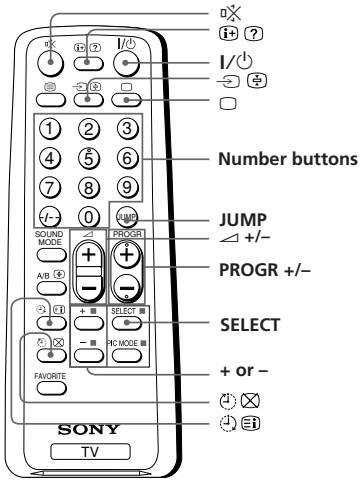
(1) Select the program number you want to adjust.
(2) Press SELECT until "MANUAL PROGRAM" appears on the screen.
(3) Press + or – on the remote control once.
(4) Press ⓘ to display "FINE" on the screen.
(5) Press + or – continuously until the above problems are minimized.
The + or – icon on the screen flashes while tuning.
(6) Press SELECT to return to normal screen.



# Watching the TV

This section explains functions used while watching the TV. Most operations can be done using the remote.



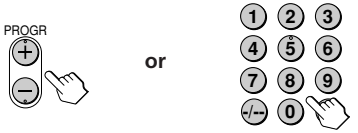




**1** Press ⏻ to turn on the TV.

When the TV is in the standby mode (the ⏻ indicator on the TV is lit red), press I/⏻ on the remote or PROGR +/– on the TV.

**2** Press PROGR +/– or the number buttons to select the program number.

For double digit numbers, press -/--, then the number (e.g., for 25, press -/--, then 2 and 5).




**3** Press ◿ +/– to adjust the volume.

continued

## Additional tasks

| To | Press |
|---|---|
| Turn off temporarily | I/⏻. The ⏻ indicator on the TV lights up red. |
| Turn off completely | ⏻ on the TV. |
| Mute the sound | 🔇. |
| Watch the video input (VCR, camcorder, etc.) | ⮆ to select "VIDEO 1" or "VIDEO 2". To return to the TV program, press 🖵. |
| Jump back to the previous program number | JUMP. |
| Display the on-screen information* | ⓘ. |
| Adjust the volume of all program numbers automatically | SELECT repeatedly until "INTELLIGENT VOL" appears, then press + or – to select "ON". To cancel, select "OFF". |
| Adjust the picture position when it is not aligned to the TV screen (KV-XG29M81/XG29M80/ XG25M80/XA21M85/XA21M81 only) | SELECT repeatedly until "PIC ROTATION" appears, then press + or – to adjust the alignment of the picture position. The ⮯ or ⮰ icon on the screen flashes while adjusting. |

* The picture, sound, and either the program number or video input are displayed. The on-screen display for the picture and sound information disappears after about three seconds.

## Changing the on-screen display language

**1** Press SELECT until "LANGUAGE / اللغة : ENGLISH"appears on the screen.

**2** Press + or – to select "عربي".

**Tip**

- You can also use SELECT and ◿ +/– on the TV to select the on-screen display language.

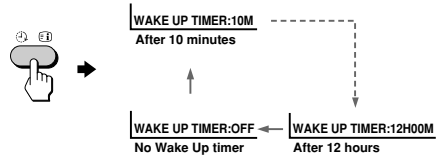




## Setting the Wake Up timer

**1** Press 🕘 until the desired period of time appears.

The Wake Up timer starts immediately after you have set it.




**2** Select the program number or video input you want to display when you wake up.

**3** Press I/⏻ or set the Sleep timer if you want the TV to turn off automatically.

The 🕘 indicator on the TV lights up orange.

### To cancel the Wake Up timer

Press 🕘 until "WAKE UP TIMER: OFF" appears or turn off the TV's main power.

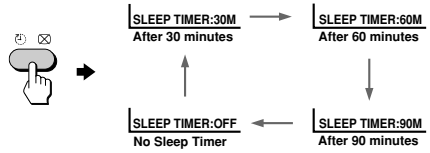
**Note**

- If no buttons or controls are pressed for more than two hours after the TV is turned on using the Wake Up timer, the TV automatically goes into the standby mode. To continue watching the TV, press any button or control on the TV or the remote.

## Setting the Sleep timer

Press 🕛 until the desired period of time appears.

The Sleep timer starts immediately after you have set it.



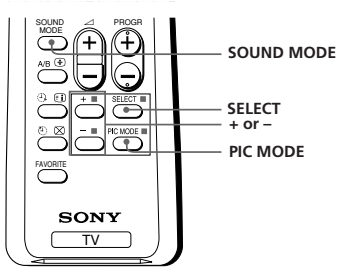

### To cancel the Sleep timer

Press 🕛 until "SLEEP TIMER: OFF" appears or turn the TV off.

# Customizing the picture and sound

You can customize the picture and sound by selecting the picture and sound modes or by adjusting its settings.

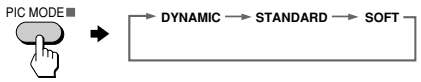
You can change the sound effect by selecting the surround mode.




## Selecting the picture and sound modes

### To select the picture mode

Press PIC MODE repeatedly until you get the desired picture mode.




| Select | To |
|---|---|
| "DYNAMIC" | view high contrast pictures. |
| "STANDARD" | view normal contrast pictures. |
| "SOFT" | view mild pictures. |

### To select the sound mode

Press SOUND MODE repeatedly until you get the desired sound mode.

| Select | To |
|---|---|
| "DYNAMIC" | listen to dynamic and clear sound that emphasizes the low and high sound. |
| "DRAMA" | listen to sound that emphasizes vocals and background music. |
| "SOFT" | listen to soft sound. |

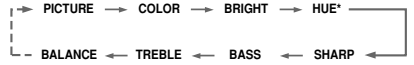




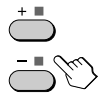
## Adjusting the picture and sound settings

**1** Press SELECT until the desired setting appears.

Each time you press SELECT, the setting item will change as follows:




**2** Press + or – to adjust the item.




**3** To adjust other items, repeat steps 1 to 2.

* "HUE" can be adjusted for the NTSC system only.

**Notes**

- When you select a picture or sound mode, the adjusted settings will be reset according to the selected mode.
- You can also use SELECT and +/– on the TV to adjust the picture and sound settings.

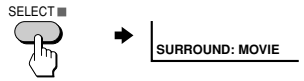


continued

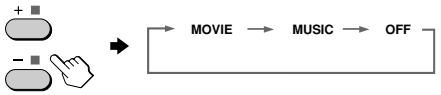
## Selecting the surround mode

### KV-XG29M81/XG29M80/XG25M80

**1** Press SELECT repeatedly until "SURROUND" appears.



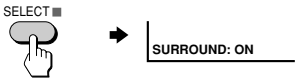

**2** Press + or – to select the desired surround sound.




| Select | To |
|---|---|
| "MOVIE" | listen to sound that spreads out over a large area, giving the feeling of being at a movie theatre. |
| "MUSIC" | listen to the sound that gives the feeling of being at a live concert. |
| "OFF" | turn off the surround sound. |

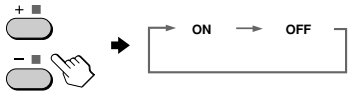
### KV-XA21M85/XA21M83/XA21M81/XA21M80

**1** Press SELECT repeatedly until "SURROUND" appears.




**2** Press + or – to select "ON".

To turn off the surround mode, select "OFF" .

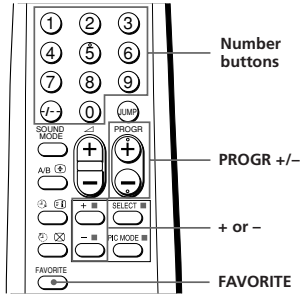






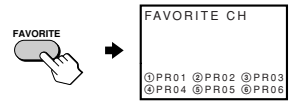

# Viewing your favorite channels

You can display six of your favorite channels for quick and easy selection. You can program the favorite channel as well.



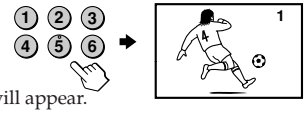

## Selecting a favorite channel

**1** Press FAVORITE.



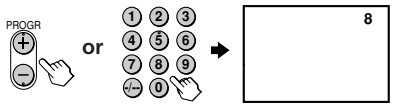

**2** Press the number button from 1 to 6 to select the desired favorite channel.

When you use the "FAVORITE CH" feature for the first time, six preset channels will appear.




## Programming the favorite channel

**1** Press PROGR +/– or number buttons to select the program number you want to program (e.g., program number 8).




**2** Press SELECT until "FAVORITE CH SETUP" appears.

**3** Press + or – to select the favorite channel you want to program (e.g., ③).

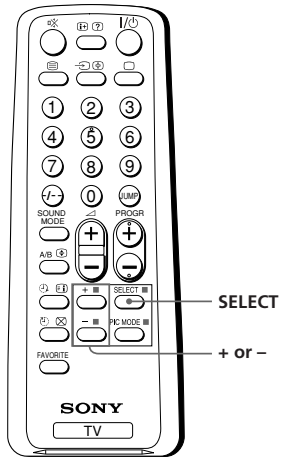
**4** Press SELECT.

The selected favorite channel (e.g.,③) turns red for about one second.

**5** To program other favorite channels, repeat steps 1 to 4.

# Blocking the channels (CHILD LOCK)

You can lock some program numbers to prevent children from watching certain channels, by using the buttons on the remote control.



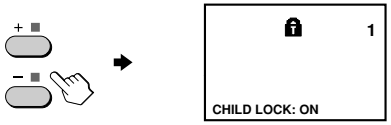

**1** Select the program number you want to lock.

**2** Press SELECT until "CHILD LOCK" appears on the screen.

**3** Press + or – to select "ON".

The 🔒 symbol appears on the screen.

To cancel, press + or – to select "OFF". The 🔒 symbol disappears from the screen.



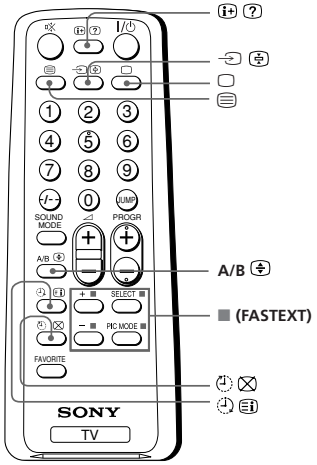

**Note**

- If you preset a locked program number, that particular program number will be unlocked automatically.

# Viewing Teletext

**(KV-XG29M81/XA21M85/XA21M81 only)**

TV stations broadcast an information service called Teletext via some TV channels. Teletext allows you to receive various information, such as shares market or news.

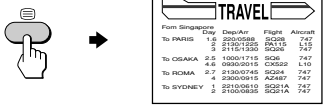



## Displaying Teletext

**1** Select a TV channel that carries the Teletext broadcast you want to watch.

**2** Press ☰ to display the text.

A Teletext page (normally the index page) is displayed. If there is no Teletext broadcast, "100" is displayed at the top left corner of the screen.




### To turn off Teletext

Press ▢.

continued

## Additional Teletext tasks

| To | Do this |
|---|---|
| display a Teletext page on the TV picture | Press ☰.<br>Each time you press ☰, the screen changes as follows: Teletext → Teletext and TV → TV. |
| check the contents of a Teletext service | Press ☰i.<br>An overview of the Teletext contents and page numbers appear on the screen. |
| select a Teletext page | Press the number buttons to enter the three-digit page number of the desired Teletext page. * If you make a mistake, reenter the correct page number. To access the next or previous page, press PROGR +/–. |
| hold (pause) a Teletext display | Press ⊕ to display the symbol " ⊕ " at the top left corner of the screen. To resume normal Teletext operation, press ⊕ or ☰. |
| reveal concealed information (e.g., an answer to a quiz) | Press ?.<br>To conceal the information, press the button again. |
| enlarge the Teletext display | Press ⊕.<br>Each time you press ⊕, the Teletext display changes as follows: Enlarge upper half → Enlarge lower half → Normal size. |
| wait for a Teletext page while watching a TV program | 1 Enter the Teletext page number that you want to refer to, then press ⊠.<br>2 When the page number is displayed, press ☰ to show the text. |

* You can also select a Teletext page that appears in the colored column at the bottom of the screen using the corresponding color-coded button on the remote.

## Using FASTEXT

This feature allows you to quickly access a Teletext page that uses FASTEXT. When a FASTEXT program is broadcasted, the colored menus appear at the bottom of the screen. The colors of the menus correspond to the red ■, green ■, yellow ■, and blue ■ color-coded buttons on the remote.

### To access a FASTEXT menu

Press the color-coded button on the remote corresponding to the menu you want. The menu page appears on the screen after several seconds.



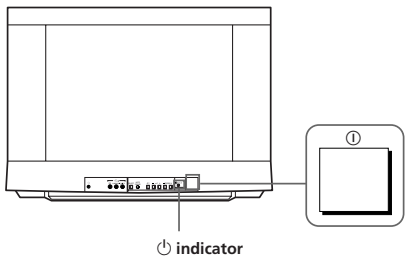




# Self-diagnosis function

Your TV is equipped with a self-diagnosis function. If there is a problem with your TV, the ⏻ indicator flashes red. The number of times the ⏻ indicator flashes indicates the possible causes.

Front of TV




**1** Check that the ⏻ indicator flashes red several times between three seconds intervals.

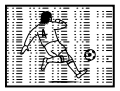
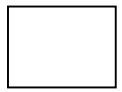
**2** Count the number of times the ⏻ indicator flashes.

**3** Press ⏻ (main power) to turn off your TV.

**4** Inform your nearest Sony service center about the number of times the ⏻ indicator flashes.
Be sure to note the model name and serial number located on the rear of your TV.

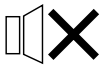
# Troubleshooting

If you find any problem while viewing your TV, please check the following guide. If any problem persists, contact your Sony dealer .

| Symptom | Possible cause | Solutions | Page |
|---|---|---|---|
| **Snowy picture**  **Noisy sound** | • Connection is loose or the cable is damaged. | • Check the antenna cable and connection on the TV, VCR and on the wall. | 4 |
| | • Channel presetting is inappropriate or incomplete. | • Press SELECT until "MANUAL PROGRAM" appears on the screen, then preset the channel again. | 11 |
| | • The antenna type is inappropriate. | • Check the antenna type (VHF/UHF). Contact a Sony dealer for advice. | – |
| | • The antenna direction is inappropriate. | • Adjust the antenna direction. Contact a Sony dealer for advice. | – |
| | • Signal transmission is low. | • Try using a booster. | – |
| **Distorted picture** **Noisy sound** | • Broadcast signals are too strong. | • Turn off or disconnect the booster if it is in use. | – |
| **Good picture** **Noisy sound** | • The TV system setting or channel presetting is inappropriate or incomplete. | • If the sound of some channels are noisy, select the channel, then select the appropriate TV system (TV SYS). | 11 |
| **No picture**  **No sound** | • The power cord, antenna or VCR is not connected. | • Check the power cord, antenna and the VCR connections. | 4 |
| | • The TV is not turned on. | • Press I/⏻ (power).<br>• Press ⏻ (main power) on the TV to turn off the TV for about five seconds, then turn it on again. | 14<br>13 |

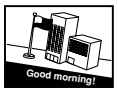




| Symptom | Possible cause | Solutions | Page |
|---|---|---|---|
| **Good picture** **No sound**  | • The volume level is too low. | • Press + to increase the volume level. | 13 |
| | • The sound is muted. | • Press 🔇 to cancel the muting. | 14 |
| **Dotted lines or stripes** | • There is local interference from cars, neon signs, hair dryers, power generators, etc. | • Do not use a hair dryer or other equipment near the TV.<br>• Adjust the antenna direction for minimum interference. Contact a Sony dealer for advice. | –<br>– |
| **Double images or "ghosts"** | • Broadcast signals are reflected by nearby mountains or buildings. | • Use a highly directional antenna.<br>• Use the fine tuning (FINE) function. | –<br>12 |
| | • The antenna direction is inappropriate. | • Adjust the antenna direction. Contact a Sony dealer for advice. | – |
| | • Use of a booster is inappropriate. | • Turn off or disconnect the booster if it is in use. | – |
| **No color** | • The color level setting is too low. | • Press SELECT until "COLOR" appears on the screen, then press + or – to adjust the color level. | 17 |
| | • The color system setting is inappropriate. | • Press SELECT until "COLOR SYS " appears on the screen, then check the color system setting (usually set this to "AUTO"). | 12 |
| | • The antenna direction is inappropriate. | • Adjust the antenna direction. Contact a Sony dealer for advice. | – |
| **Abnormal color patches** | • The magnetic disturbance from external speakers or other equipment, or the direction of the earth's magnetic field may affect the TV. | • Keep external speakers or other electrical equipment away from the TV. Do not move the TV while the TV is turned on. Press ⏻ (main power) on the TV to turn off the TV for about 15 minutes, then turn it on again. | – |

continued

## *Troubleshooting (continued)*

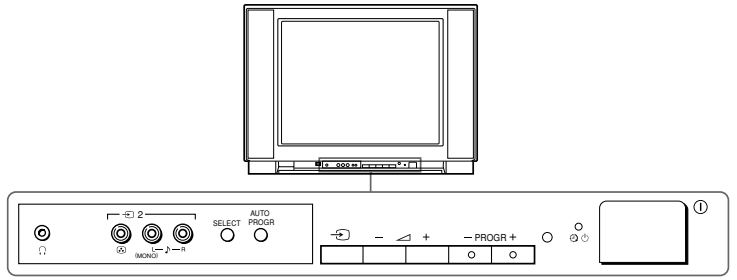
| Symptom | Possible cause | Solutions | Page |
|---|---|---|---|
| **"100" appears on the top of the screen and there is no Teletext display. (KV-XG29M81/ XA21M85/XA21M81 only)** | • The channel carries no Teletext broadcast. | — | 21 |
| **Teletext display is incomplete (snowy picture or double images). (KV-XG29M81/ XA21M85/XA21M81 only)** | • Connection is loose or the cable is damaged. | • Check the antenna cable and connection on the TV, VCR, and at the wall. | 4 |
| | • The antenna direction is inappropriate. | • Adjust the antenna direction. Contact a Sony dealer for advice. | – |
| | • Signal transmission is too low. | • Try using a booster.<br>• Use the fine tuning (FINE) function. | –<br>12 |
| **Picture slant (KV-XG29M81/ XG29M80/XG25M80/ XA21M85/XA21M81 only)**   | • The magnetic disturbance from external speakers or other equipment, or the direction of the earth's magnetic field may affect the TV. | • Keep external speakers or other electrical equipment away from the TV.<br>• Press SELECT until "PIC ROTATION" appears on the screen, then press + or – to adjust the picture until it is optimal. | –<br>14 |
| **Lines moving across the TV screen.** | • There is interference from external sources, e.g., heavy machineries, nearby broadcast station. | • Use the fine tuning (FINE) function. | 12 |
| **The ⏻ indicator on your TV flashes red a number of times between three seconds intervals.** | • Your TV may need service. | • Contact your nearest Sony service center. | 23 |
| **TV cabinet creaks.** | • Changes in room temperature sometimes make the TV cabinet expand or contract, making a noise. This does not indicate a malfunction. | — | – |
| **A "boom" sound is heard when the TV is turned on.** | • The TV's demagnetizing function is working. This does not indicate a malfunction. | — | – |



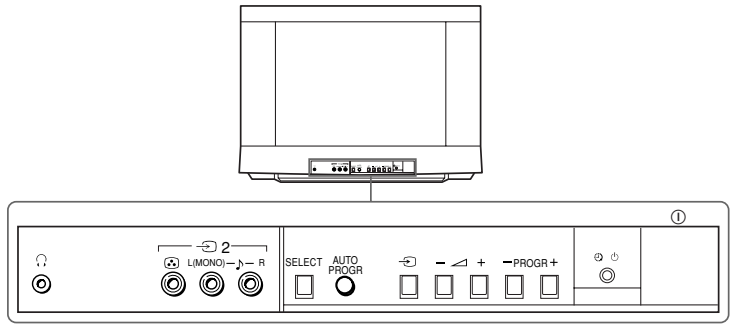
# Overview of controls

## TV front panel

### KV-XG29M81/XG29M80/XG25M80




### KV-XA21M85/XA21M83/XA21M81/XA21M80

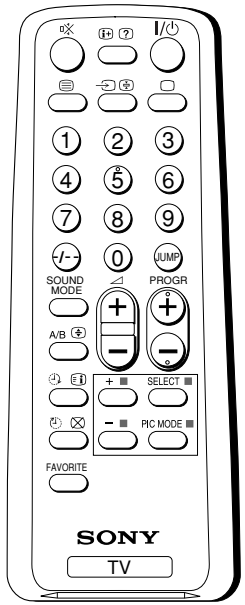



| Button | Function | Page |
|---|---|---|
| AUTO PROGR | Preset channels automatically. | 5 |
| SELECT | Select the desired item. | 12 |
| PROGR +/– | Select program number. | 13 |
| ⏻ | Turn off completely or turn on the TV. | 13 |
| ◿ +/– | Adjust volume. | 13 |
| ⏻ | Standby indicator. | 13 |
| ⏎ | Select TV or video input. | 14 |
| 🕒 | Wake Up indicator. | 15 |
| 🎧 | Headphone jack. | – |

**continued**

*Overview of controls (continued)*

## Remote Control



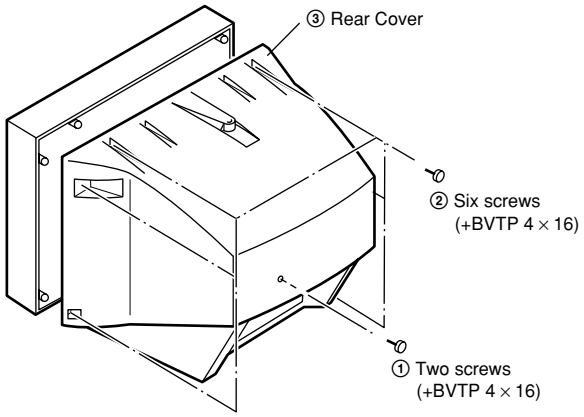

The names/symbols of buttons on the remote are indicated in different colors to represent the available functions.

| Label color | Button function |
|---|---|
| White | For general TV operations |
| Green | For Teletext operations |

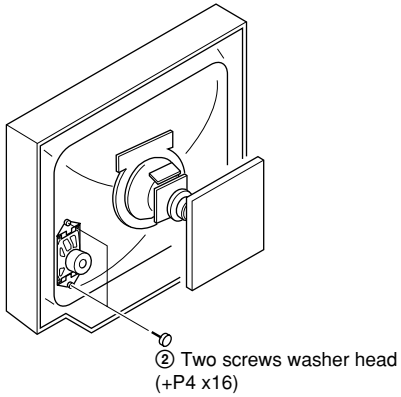
| Button | Function | Page |
|---|---|---|
| SELECT | Select the desired item. | 11 |
| +/– | Adjust value. | 11 |
| PROGR +/– | Select program number. | 13 |
| 0 – 9, -/-- | Input numbers. | 13 |
| +/– | Adjust volume. | 13 |
| I/⏻ | Turn off temporarily or turn on the TV. | 13 |
| | Select TV or video input. | 14 |
| | Display the TV program. | 14 |
| | Mute the sound. | 14 |
| | Display on-screen information. | 14 |
| JUMP | Jump to previous program number. | 14 |
| Timer operations | | |
| | Set TV to turn on automatically. | 15 |
| | Set TV to turn off automatically. | 15 |
| PIC MODE | Select picture mode. | 16 |
| SOUND MODE | Select sound mode. | 16 |
| FAVORITE | Display favorite channels. | 19 |
| Stereo/bilingual operations (Not used for KV-XG29M81/XG29M80/XG25M80/ XA21M85/XA21M83/XA21M81/XA21M80) | | |
| A/B | Select stereo/bilingual mode. | – |
| Teletext operations (KV-XG29M81/XA21M85/XA21M81 only) | | |
| | Display Teletext broadcast. | 21 |
| | Display Teletext service contents. | 22 |
| | Stop Teletext display from scrolling. | 22 |
| | Reveal concealed information. | 22 |
| | Enlarge the Teletext display. | 22 |
| | Show TV screen while waiting for Teletext page. | 22 |
| ■ (red, green, yellow, blue) | Access a FASTEXT menu. | 22 |

# SECTION 2
# DISASSEMBLY

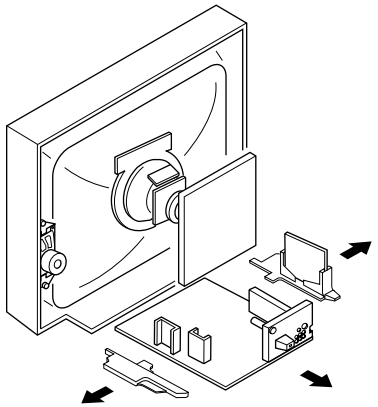
## 2-1. REAR COVER REMOVAL



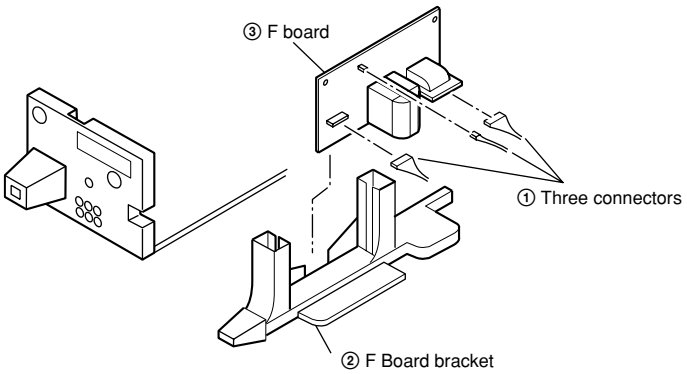

## 2-2. SPEAKER REMOVAL



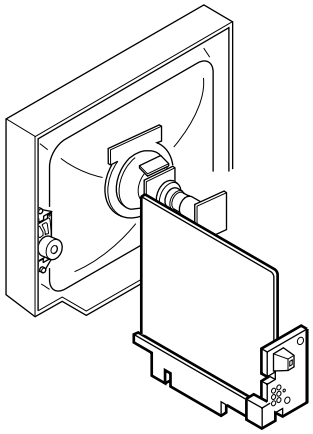

## 2-3. CHASSIS ASSY REMOVAL



## 2-4. F BRACKET REMOVAL




## 2-5. SERVICE POSITION



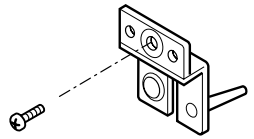
**Note:**

1. Undress necessary wires that creates tension while placing the chassis into Service Position.

## 2-6. REPLACEMENT OF PARTS

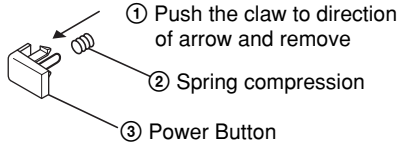
For replacement of light guide,unscrew them, exchange with new parts and fix them with screws respectively.

### 2-6-1. Replacement of Light Guide

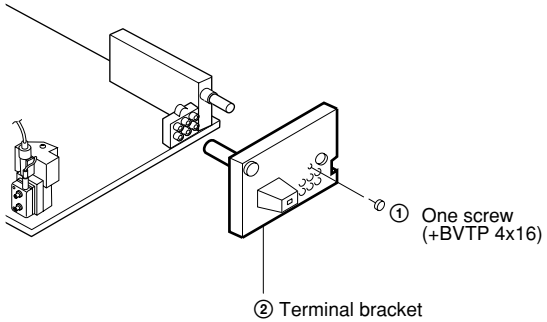


One screw
(+BVTP 3 × 12)

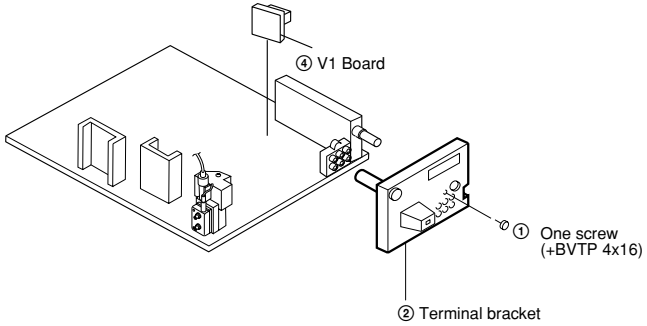
### 2-6-2. Replacement of Power Button



## 2-7. TERMINAL BRACKET REMOVAL



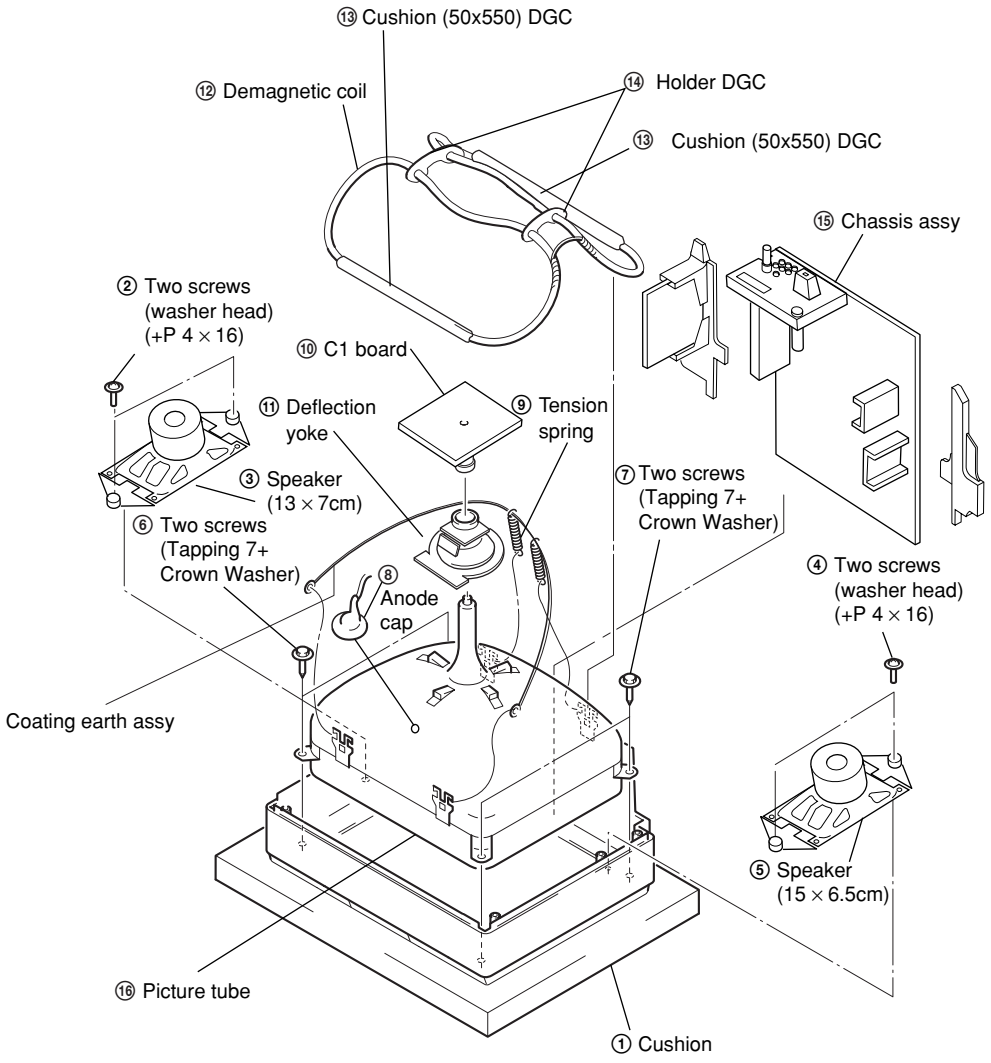

## 2-8. V1 BOARD REMOVAL



## 2-9. PICTURE TUBE REMOVAL

**Note:**

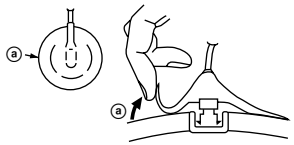
- Please remove necessary CRT support located on top left, top right, prior to removing the CRT.


⑬ Cushion (50x550) DGC
⑫ Demagnetic coil
⑭ Holder DGC
⑬ Cushion (50x550) DGC
⑮ Chassis assy
② Two screws (washer head) (+P 4 × 16)
⑩ C1 board
⑪ Deflection yoke
⑨ Tension spring
③ Speaker (13 × 7cm)
⑦ Two screws (Tapping 7+ Crown Washer)
⑥ Two screws (Tapping 7+ Crown Washer)
⑧ Anode cap
④ Two screws (washer head) (+P 4 × 16)
Coating earth assy
⑤ Speaker (15 × 6.5cm)
⑯ Picture tube
① Cushion

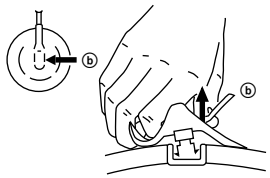
## • REMOVAL OF ANODE-CAP

NOTE : After removing the anode, short circuit the anode of the picture tube and the anode cap to the metal chassis, CRT shield or carbon paint on the CRT.

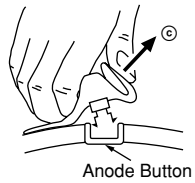
## • REMOVING PROCEDURES




① **Turn up one side of the rubber cap in the direction indicated by the arrow ⓐ.**



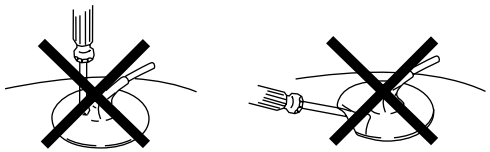

② **Using a thumb pull up the rubber cap firmly in the direction indicated by the arrow ⓑ.**




③ **When one side of the rubber cap is separated from the anode button, the anode-cap can be removed by turning up the rubber cap and pulling it up in the direction of the arrow ⓒ.**

## • HOW TO HANDLE AN ANODE-CAP

① **Do not damage the surface of anode-caps with sharp shaped objects.**
② **Do not press the rubber too hard so as not to damage the inside of anode-cap. A metal fitting called the shatter-hook terminal is built into the rubber.**
③ **Do not turn the foot of rubber over too hard. The shatter-hook terminal will stick out or damage the rubber.**



# SECTION 3
# SET-UP ADJUSTMENTS

- The following adjustments should be made when a complete realignment is required or a new picture tube is installed.
- These adjustments should be performed with rated power supply voltage unless otherwise noted.

Controls and switches should be set as follows unless otherwise noted:

PICTURE control ..... normal
BRIGHTNESS control ..... normal

Perform the adjustments in the following order :

1. Beam Landing
2. Convergence
3. Focus
4. White Balance

**Note :** Test Equipment Required.

1. Pattern Generator
2. Degausser
3. Oscilloscope

**Preparation :**

- In order to reduce the influence of geomagnetism on the set's picture tube, face it east or west.
- Switch on the set's power and degauss with the degausser.

## 3-1. BEAM LANDING

1. Input a white signal with the pattern generator.
   Contrast, Brightness } normal
2. Set the pattern generator raster signal to a green raster.
3. Move the deflection yoke to the rear and adjust with the purity control so that the green is at the center and the blue and the red take up equally sized areas on each side. (See Figures 3-1 through 3-4.)
4. Move the deflection yoke forward and adjust so that the entire screen is green. (See Figure 3-1.)
5. Switch the raster signal to blue, then to red and verify the condition.
6. When the position of the deflection yoke has been decided, fasten the deflection yoke with the screws and DY spacers.
7. If the beam does not land correctly in all the corners, use a magnet to adjust it. (See Figure 3-4.)

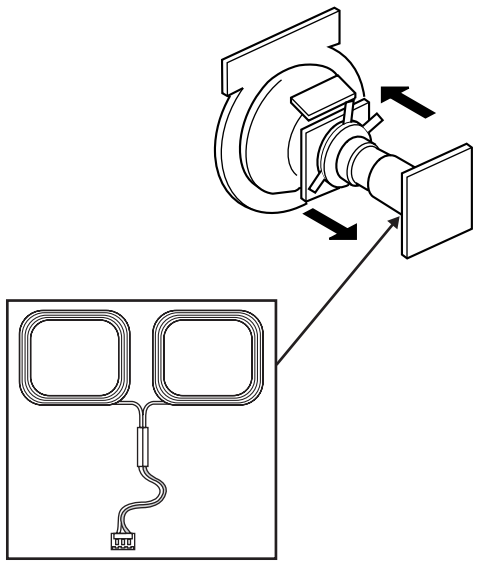


**Fig. 3-1**

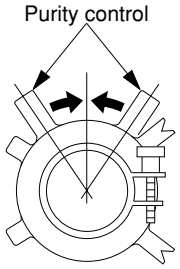



**Fig. 3-2**

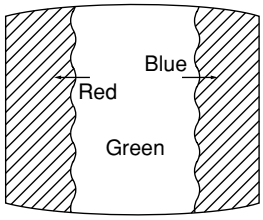



**Fig. 3-3**

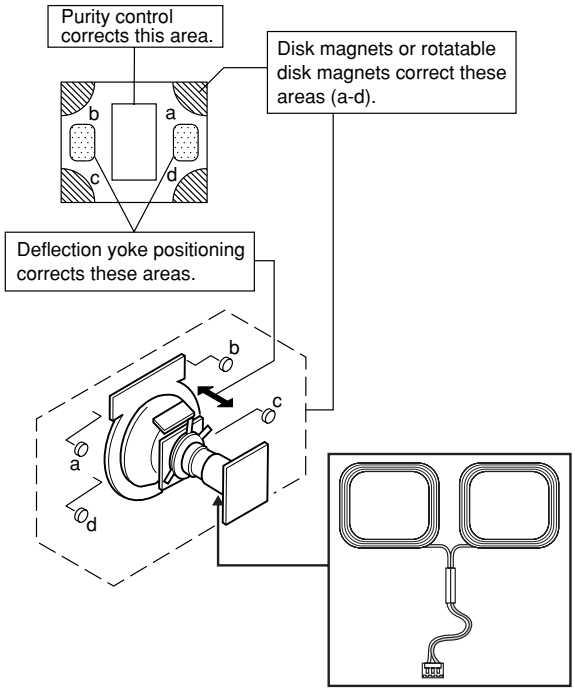


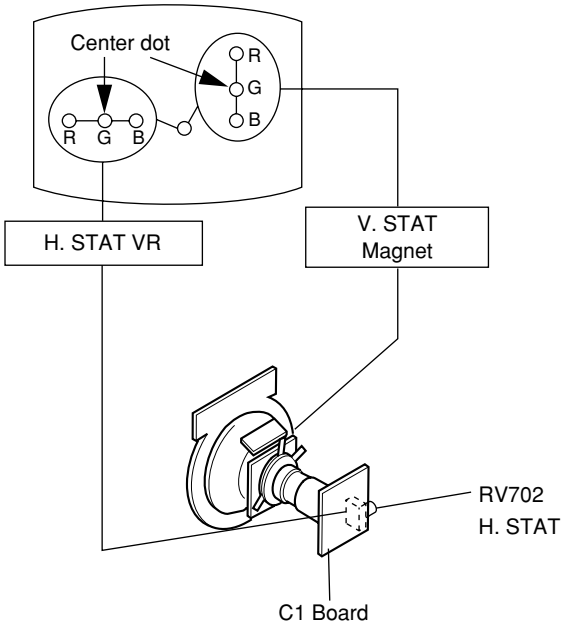

**Fig. 3-4**

## 3-2. CONVERGENCE

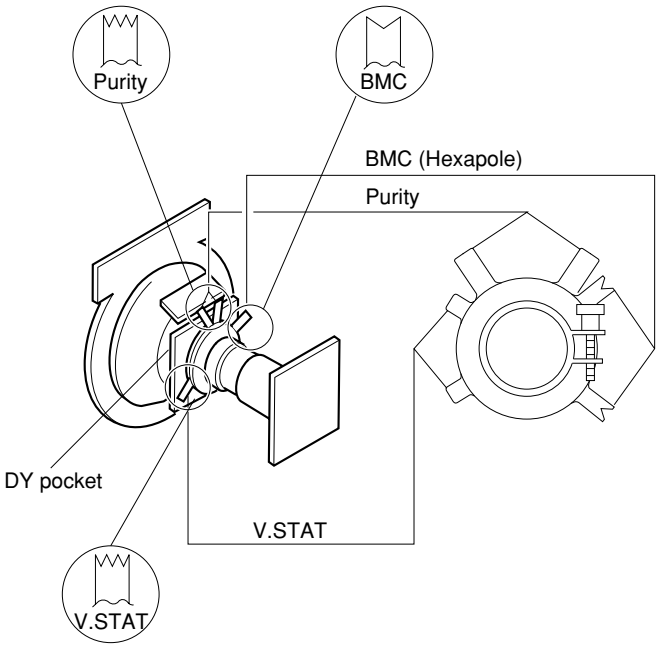
**Preparation :**

- Before starting this adjustment, adjust the focus, horizontal size and vertical size.
- Receive dot/hatch signal.
- Pic mode: Personal (Pic 90%, Brightness 50%, Col 50 %, Hue 50%, Shp 50%).

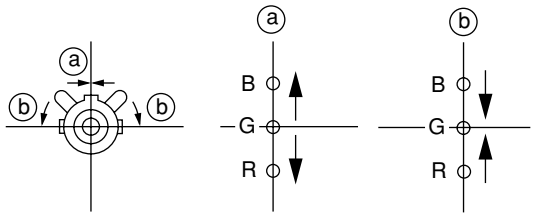
### (1) Horizontal and Vertical Static Convergence



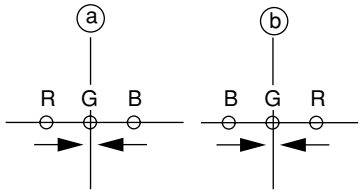

1. (Moving horizontally), adjust the H.STAT control so that the red, green and blue dots are on top of each other at the center of the screen.
2. (Moving vertically), adjust the V.STAT magnet so that the red, green and blue dots are on top of each other at the center of the screen.
3. If the H.STAT variable resistor cannot bring the red, green and blue dots together at the center of the screen, adjust the horizontal convergence with the H.STAT variable resistor and the V.STAT magnet in the manner given below.
   (In this case, the H.STAT variable resistor and the V.STAT magnet influence each other, so be sure to perform adjustments while tracking.)



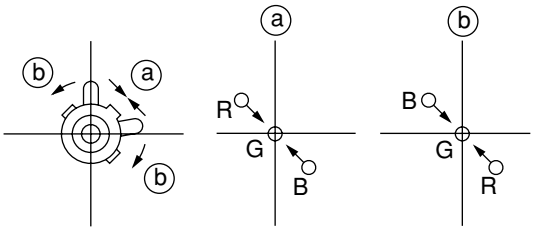

① V. STAT



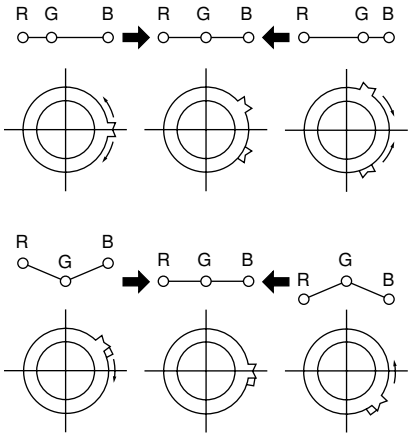

② H. STAT VR




③

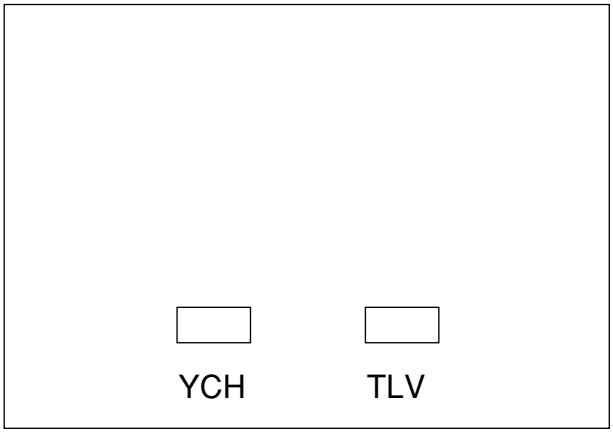


④ BMC (Hexapole) Magnet.
If the red, green and blue dots are not balanced or aligned, then use the BMC magnet to adjust in the manner described below.

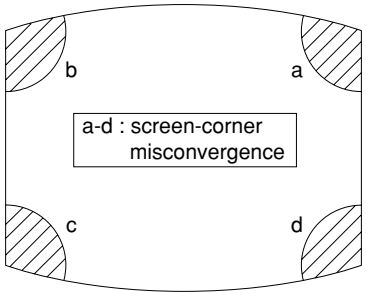



| | | | |
|---|---|---|---|
| YCH | Rotate | YCH | VOL on DY |
| TLV | Insert | TLH | Correction Plate to DY Pocket (Left or Right) |

ON DY:



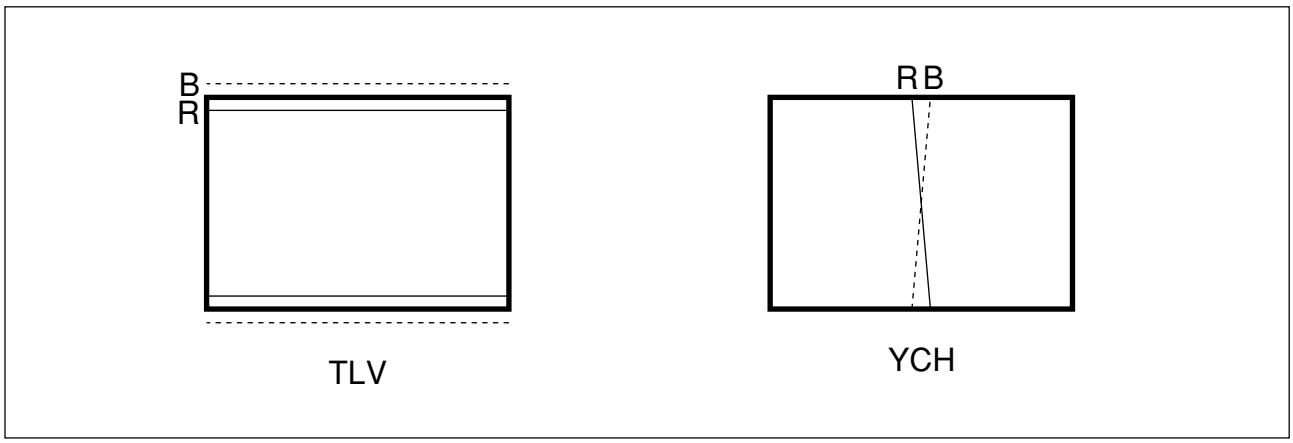

**(3) Screen-corner Convergence**

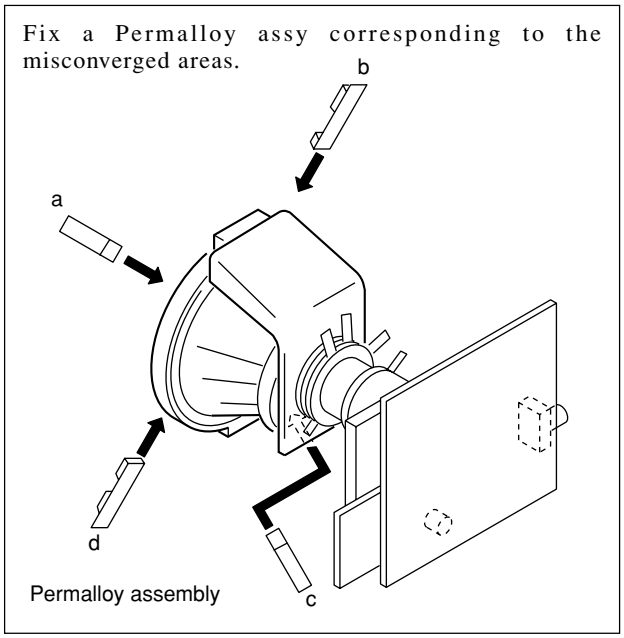



**(2) Dynamic Convergence Adjustment**

**Preparation:**

- Before starting this adjustment, adjust the horizontal static convergence and the vertical static convergence

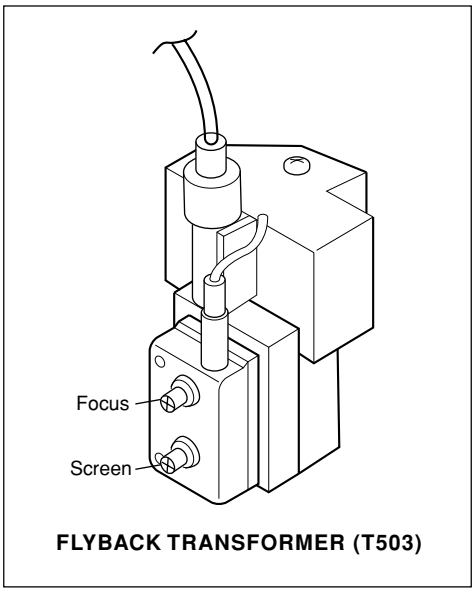





## 3-3. FOCUS ADJUSTMENT

FOCUS adjustment should be completed before W/B adjustment.

1. Receive digital monoscope pattern.
2. Set "Picture Mode" to "DYNAMIC".
3. Adjust focus VR so that the center of screen becomes just focus.
4. Change the receiving signal to white pattern and blue back.
5. Confirm magenta ring is not noticeable. Incase magenta is very obvious, adjust focus VR to take balance of magenta ring and focus.

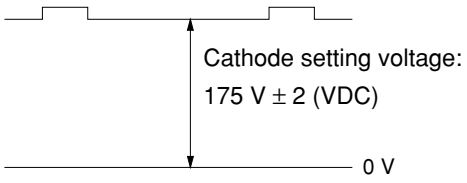



**FLYBACK TRANSFORMER (T503)**

## 3-4. G2 (SCREEN) AND WHITE BALANCE ADJUSTMENTS

### 1. G2 (SCREEN) ADJUSTMENT

1) Set the PICTURE to normal.
2) Put to VIDEO input mode without signals.
3) Connect R, G and B of the C1 board cathode to the oscilloscope.
4) Adjust BRIGHTNESS to obtain the cathode voltage to the value below.
5) Adjust G2 (screen) on the FBT until picture shows the point before cut off.

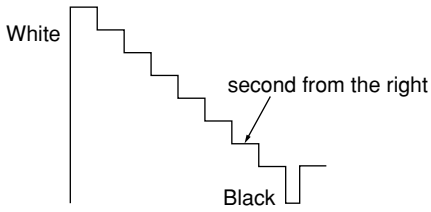



### 2. WHITE BALANCE ADJUSTMENT

1) Set to Service Mode (Refer Section 4-1: ADJUSTMENTS WITH COMMANDER).
2) Input white raster signal.
3) Set the PICTURE to minimum.
4) Select GCT (WHB 4) and BCT (WHB 5) with [1] and [4], and adjust the level with [3] and [6] for the best white balance.
5) Set the PICTURE to maximum.
6) Select GDR (WHB 1) and BDR (WHB 2) with [1] and [4], and adjust the level with [3] and [6] for the best white balance.
7) Write into the memory by pressing [MUTING] then [0].

### 3. SUB BRIGHT ADJUSTMENT

1) Set to service mode.
2) Input a staircase signal of black to white from the pattern generator.
3) BRIGHTNESS .... 50%.
   PICTURE ..... MINIMUM
4) Select SBR (WHB7) with [1] and [4], and adjust SBR (WHB7) level with [3] and [6] so that the second stripe from the right is dimly lit.



# SECTION 4
# CIRCUIT ADJUSTMENTS

## 4-1. ADJUSTMENTS WITH COMMANDER

Service adjustments to this model can be performed using the supplied Remote Commander RM-952

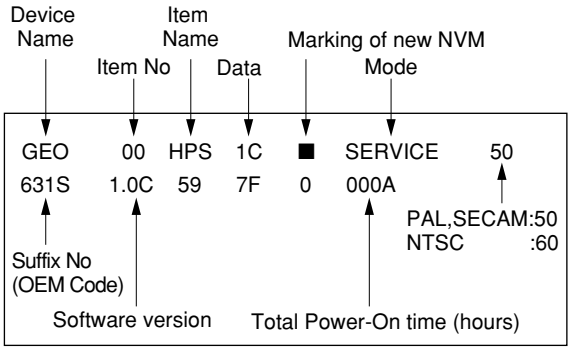
### a. ENTERING SERVICE MODE

With the unit on standby

→ [DISPLAY] → [5] → [VOL (+)] → [POWER]

This operation sequence puts the unit into service mode.

The screen display is :




### b. METHOD OF CANCELLATION FROM SERVICE MODE

Set the standby condition (Press [POWER] button on the commander), then press [POWER] button again, hereupon it becomes TV mode.

### c. METHOD OF WRITE INTO MEMORY

1) Set to Service Mode.
2) Press [1] (UP) and [4] (DOWN), to select the adjustment.
4) Press [MUTING] button to indicate WRITE on the screen.
5) Press [0] button to write into memory.

### d. MEMORY WRITE CONFIRMATION METHOD

1) After adjustment, pull out the plug from AC outlet, and then plug into AC outlet again.
2) Turn the power switch ON and set to Service Mode.
3) Call the adjusted items again to confirm adjustments were made.

| | |
|---|---|
| [1], [4] | Select the adjustment item. |
| ↓ | |
| [3], [6] | Raise/lower the data value. |
| ↓ | |
| [MUTING] | Writes. |
| ↓ | |
| [0] | Executes the writing. |

| | |
|---|---|
| [7], [0] | All the data becomes the values in memory. |
| [8], [0] | All user control goes to the standard state. |
| [5], [0] | Service data initialization (Be sure not to use usually.) |
| [2], [0] | Write 50Hz adjustment data to 60Hz, or vice versa. |

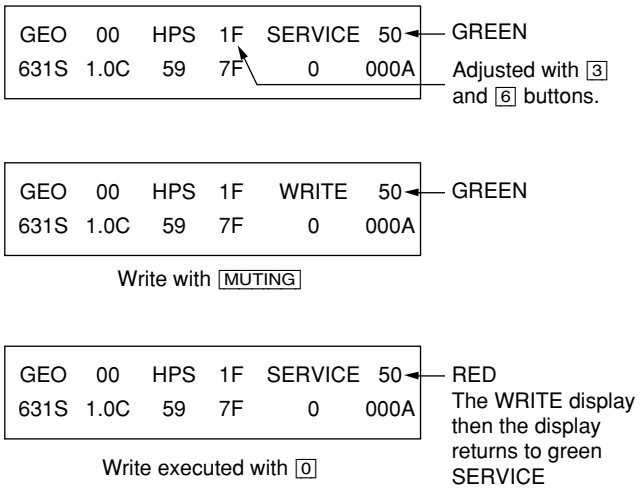
## 4-2. ADJUSTMENT METHOD

Item Number 00 of device GEO

This explanation uses H-Position as an example.

1. Select "GEO 00 HPS" with the [1] and [4] buttons.
2. Raise/lower the data with the [3] and [6] buttons.
3. Select the optimum state. (The standard is 1F for PAL reception.)
4. Write with the [MUTING] button. (The display changes to WRITE.)
5. Execute the writing with the [0] button. (The WRITE display will be changed to red color while excuting, and back to SERVICE.)

Example on screen display :-


GEO 00 HPS 1F SERVICE 50
631S 1.0C 59 7F 0 000A
GREEN
Adjusted with 3 and 6 buttons.
GEO 00 HPS 1F WRITE 50
631S 1.0C 59 7F 0 000A
GREEN
Write with MUTING
GEO 00 HPS 1F SERVICE 50
631S 1.0C 59 7F 0 000A
RED
The WRITE display then the display returns to green SERVICE
Write executed with 0

Use the same method for all Items. Use [1] and [4] to select the adjustment item, use [3] and [6] to adjust, write with [MUTING], then execute the write with [0].

**Note** : 1. In [WRITE], the data for all items are written into memory together.
2. For adjustment items that have different standard data between 50Hz or 60Hz, be sure to use the respective input signal after adjustment.

**Adjustment Item Table**

| TVG | Functionality | | Init. Data | Range | Function | Table & Note | Service Data |
|---|---|---|---|---|---|---|---|
| Category | No. | Name | | | | | |
| GEO | 00 | HPS | 7 | 3F | H POSITION | Normal(50/60)/Wide(50/60) | 1E/16 |
| | 01 | HSZ | 1F | 3F | H SIZE | Normal(50/60)/Wide(50/60) | 1F |
| | 02 | PAP | 1F | 3F | PIN AMP | Normal(50/60)/Wide(50/60) | 1F |
| | 03 | TLT | 7 | 0F | TRAPEZIUM | Normal(50/60)/Wide(50/60) | 07 |
| | 04 | VPS | 1F | 3F | V POSITION | Normal(50/60)/Wide(50/60) | 1F |
| | 05 | VSZ | 1F | 3F | V SIZE | Normal(50/60)/Wide(50/60) | 1F |
| | 06 | SCO | 07 | 0F | S CORRECTION | Normal(50/60)/Wide(50/60) | 07 |
| | 07 | VLN | 07 | 0F | V LINEARITY | Normal(50/60)/Wide(50/60) | 07 |
| | 08 | BOW | 07 | 0F | AFC BOW | Normal(50/60)/Wide(50/60) | 07 |
| | 09 | AGL | 07 | 0F | AFC ANGLE | Normal(50/60)/Wide(50/60) | 07 |
| | 0A | UPN | 1F | 3F | UPPER PIN | Normal(50/60)/Wide(50/60) | 1F |
| | 0B | LPN | 2F | 3F | LOWER PIN | Normal(50/60)/Wide(50/60) | 1F |
| | 0C | HBL | 01 | 1 | H BLANKING ON/OFF | – | 01/01 |
| | 0D | LBL | 0F | 0F | LEFT H BLANKING | Normal(50/60)/Wide(50/60) | 0F/0D |
| | 0E | RBL | 02 | 0F | RIGHT H BLANKING | Normal(50/60)/Wide(50/60) | 00/00 |
| WHB | 00 | RDR | 25/2A | 3F | R DRIVE | DYNAMIC/others | 25/2A |
| | 01 | GDR | 25 | 3F | G DRIVE | DYNAMIC/others | 25 |
| | 02 | BDR | 25 | 3F | B DRIVE | DYNAMIC/others | 25 |
| | 03 | RCT | 07 | 0F | R CUTOFF | SECAM/others | 0A |
| | 04 | GCT | 07 | 0F | G CUTOFF | SECAM/others | 07 |
| | 05 | BCT | 07 | 0F | B CUTOFF | SECAM/others | 07 |
| | 06 | BMN | 15 | 1F | BRIGHTNESS MINIMUM DATA | | 15 |
| | 07 | SBR | 1F | 3F | SUB BRIGHTNESS CONTROL | | 25 |
| | 08 | APB | 00 | 3 | SUB BRIGHT CTL SW FOR PNC #3 | | 02 |
| SAJ | 00 | PMX | 36 | 3F | PICTURE MAXIMUM DATA | | 3A |
| | 01 | SHU | 08 | 0F | SUB HUE CONTROL | TV/Video | 08 |
| | 02 | SSH | 05/08 | 0F | SUB SHARPNESS CONTROL | TV/Video | 05/09 |
| | 03 | SCL | 1F | 3F | SUB COLOR CONTROL | Normal(NTSC/others)/Wide (NTSC/others) | 1F |

## Adjustment Item Table

| TVG | Functionality | | Init. Data | Range | Function | Table & Note | Service Data |
|---|---|---|---|---|---|---|---|
| Category | No. | Name | | | | | |
| VP | 00 | EHT | 05 | 0F | EHT COMP | Normal(50/60)/Wide(50/60) | 07/07 |
| | 01 | GMA | 02 | 03 | GAMMA CORRECTION | Refer NVM Map A4 | |
| | 02 | APG | 00 | 1 | GAMMA CTL SW FOR PNC #3 | Non-STD(NTSC others)/STD(NTSC/others) | 00 |
| | 03 | YDL | 6/9/8 | 0F | Y DELAY | PAL/SECAM/NTSC | 6/9/8 |
| | 04 | SST | 01 | 03 | SECAM ID START POSITION | SECAM/PAL | 01/01 |
| | 05 | SSP | 01 | 03 | SECAM ID STOP POSITION | SECAM/PAL | 01/01 |
| | 06 | RLM | 00 | 3 | RGB LIMIT | | 02 |
| | 07 | SLV | 02 | 03 | SECAM ID LEVEL | SECAM/PAL | 02/02 |
| | 08 | SBF | 22 | 3F | SECAM BELL F0 | SECAM/PAL | 22/22 |
| | 09 | DYC | 01 | 1 | DYNAMIC COLOR ON/OFF | | 01 |
| | 0A | ABL | 01 | 1 | ABL MODE SWITCHING | STANDARD Always 0 | 01 |
| | 0B | VTH | 01 | 1 | ABL DETECTION VTH SWITCHING | | 01 |
| | 0C | SF0 | 01 | 1 | F0 SWITCHING FOR SHARPNESS | NTSC/others | 01/01 |
| | 0D | DCX | 01 | 1 | DC TRANS. RATION SWITCHING | | 01 |
| | 0E | SHT | 01 | 1 | PRE-/OVERSHOOT RATIO SWITCH | NTSC/others | 01/01 |
| | 0F | HDW | 00 | 1 | H DRIVE PULSE WIDTH SWITCH | | 00 |
| | 10 | AFC | 1/0/1 | 03 | AFC GAIN CONTROL | TV/Video/Text | 1/0/1 |
| | 11 | HOS | 07 | 0F | H OSCILLATION | | 07 |
| | 12 | HSS | 00 | 1 | SLICE LEVEL OF H SYNC SEP. | | 00 |
| | 13 | VSS | 00 | 1 | SLICE LEVEL OF V SYNC SEP. | | 00 |
| | 14 | HMS | 01 | 1 | MACRO VISION C/M OFF/ON | Normal(50/60)/Wide(50/60) | 01 |
| | 15 | YUV | 01 | 1 | YUV SWITCH CONTROL | | 01 |
| | 16 | CDV | 01 | 3 | CD MODE FOR VIDEO | Video Only | 01 |
| | 17 | RON | 01 | 1 | R ON | not memorized | 01 |
| | 18 | GON | 01 | 1 | G ON | not memorized | 01 |
| | 19 | BON | 01 | 1 | B ON | not memorized | 01 |
| | 1A | PON | 01 | 1 | P ON | not memorized | 01 |
| | 1B | AXN | 01 | 1 | AXIS SW | Wide(NTSC/others)/NTSC others(Only Dyna) | 01 |
| | 1C | RSL | 00 | 1 | RGB SEL | | 00 |
| | 1D | VBW | 01 | 3 | VBLKW | | 00 |
| | 1E | RFP | 00 | 1 | REFP | | 00 |
| | 1F | JMP | 00 | 1 | JUMP | | 00 |
| | 20 | VMC | 00 | 3 | VM OFF | | 02 |
| AP | 00 | INF | 05 | 3F | INPUT ATTENUATION WHEN SURROUND OFF | | 00 |
| | 01 | INS | 0A | 3F | INPUT ATTENUATION WHEN SURROUND ON (XG-ONLY) | | 00 |
| | 02 | SEF | 00 | 0F | SURROUND EFFECT CONTROL (XA-ONLY) | | 00 |
| | 03 | PH1 | 03 | 3 | PHASE 1 REGISTER SELECTION | | 03 |
| | 04 | PH2 | 00 | 3 | PHASE 2 REGISTER SELECTION (XG-ONLY) | | 00 |
| | 05 | PH3 | 00 | 3 | PHASE 3 REGISTER SELECTION (XG-ONLY) | | 00 |
| | 06 | PH4 | 00 | 3 | PHASE 4 REGISTER SELECTION (XG-ONLY) | | 00 |
| | 07 | BCS | 02 | 3 | BASS CENTER SHIFT | | 02 |
| | 08 | TCS | 02 | 3 | TREBLE CENTER SHIFT | | 03 |
| | 09 | TRF | 02 | 3 | RF TREBLE OFFSET | | 02 |

## Adjustment Item Table

| TVG | Functionality | | Init. Data | Range | Function | Table & Note | Service Data |
|---|---|---|---|---|---|---|---|
| Category | No. | Name | | | | | |
| MSP | 00 | WST | 15 | FF | W/G STEREO THRESHOLD | | 15 |
| | 01 | WBT | EC | FF | W/G BILINGUAL THRESHOLD | | EC |
| | 02 | WLL | 05 | FF | W/G MONAURAL THRESHOLD | | 05 |
| | 03 | WAC | 01 | 0F | W/G AGREEMENT COUNT | | 01 |
| | 04 | WDL | 30 | FF | W/G SEARCH DELAY | | 30 |
| | 05 | NDL | 20 | FF | NICAM SEARCH DELAY | | 20 |
| | 06 | SDL | 10 | FF | STEREO STATUS READ DELAY | | 10 |
| | 07 | AGC | 01 | 1 | AGC SWITCH AUTO/CONSTANT | | 01 |
| | 08 | REL | 28 | 3F | AGC GAIN AT CONSTANT MODE | | 28 |
| | 09 | CRM | 00 | 1 | CARRIER MUTING ON/OF | | 00 |
| | 0A | ACO | 01 | 1 | AUDIO CLOCK OUT ON/OFF | | 01 |
| | 0B | FP | 1B | 7F | FM PRESCALE FOR NON-M SYSTEM | | 1B |
| | 0C | FPM | 32 | 7F | FM PRESCALE FOR M SYSTEM | | 32 |
| | 0D | FH | 36 | 7F | FM PRESCALE FOR HDEV | | 36 |
| | 0E | FHM | 65 | 7F | FM PRESCALE FOR HDEV AND M | | 65 |
| | 0F | WGP | 1C | 7F | W/G PRESCALE | | 1C |
| | 10 | NIP | 7F | 7F | NICAM PRESCALE | | 7F |
| | 11 | ERR | 50 | FF | AUTO FM SWITCH THRESHOLD | | 50 |
| | 12 | VOL | 6D | FF | SPEAKER GAIN 7000H TO 7FF0H | | 6D |
| TXT | 00 | TXH | 01 | 3 | TELETEXT HORIZONTAL POSITION | | 00 |
| | 01 | TXV | 00 | 3 | TELETEXT VERTICAL POSITION | | 00 |
| OPM | 00 | OSH | 11 | 3F | OSD H POSITION | Option - Misc. | 0A |
| | 01 | COM | 01 | 03 | COMB SELECTION | | 01 |
| | 02 | APC | 01 | 1 | APC SWITCH | | 01 |
| | 03 | TSY | 00 | 03 | TV SYS AT AUTO TV SYS | | 00 |
| | 04 | MUT | 00 | 1 | NO SIGNAL MUTE | | 00 |
| | 05 | AFM | 01 | 1 | AUTO FM SWITCH | | 01 |
| | 06 | RFB | 00 | 3 | C-BPF CONTROL | | 00 |
| | 07 | TVO | 02 | 7 | TILT TO V-ANGLE OFFSET | | 00 |
| | 08 | DBL | 00 | 1 | DISABLE BLUEBACK FUNCTION | | 00 |
| OPB | 00 | OP1 | FF | FF | OPTIONAL BITS 1 (SEE BELOW) | Option - Bits. | FF |
| | 01 | OP2 | 62 | FF | OPTIONAL BITS 2 (SEE BELOW) | | # |
| | 02 | OP3 | B1 | FF | OPTIONAL BITS 3 (SEE BELOW) | | # |
| | 03 | OP4 | 02 | FF | OPTIONAL BITS 4 (SEE BELOW) | | 00 |

**NOTE**

- shaded items are fixed data.
- Standard data listed on the Adjustment Item Table are reference values, therefore it may be different for each model and for each mode.
- Note for Different Data Those are the standard data values written on the microprocessor. Therefore, the data values of the modes and stored respectively in the memory. In case of a device replacement, adjustment by rewriting the data value is necessary for some items.

**ITEM INFORMATION**

**No. OPB0 OP1**

| Item | XTAL 4.43 | XTAL 3.58 | SECAM | 2nd. Lang | B/G | I | D/K | M |
|---|---|---|---|---|---|---|---|---|
| **KV-XA21M81** | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

**NOTE:** When Bit 7, 6 & 5 = 000, Only PAL color system is selected.
When Bit 7 is selected, Auto, PAL& NTSC 4.43 Color system is enable
When Option is single color system, Color system cannot be changed & "AUTO" will not be displayed.

**No. OPB1 OP2**

| Item | TOP | NICAM | HDEV | Thai Bil | Dis Fav. | DVD Input | AV Input | |
|---|---|---|---|---|---|---|---|---|
| **KV-XA21M81** | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 |

| | |
|---|---|
| AV Input | 00 = no AV Input 01 = 1 AV Input |
| | 10 = 2 AV Input 11 = 3 AV Input |
| DVD Input | Effective only when "AV Input" is set to 3 AV Input |
| Dis Fav. | Disable Favorite Channel (Effective For XF-L (21" & 14") Models Only) |

**No. OPB2 OP3**

| Item | PIC Rotate*1 | 2199 Curve*1 | Auto PIC | Auto TV sys | US ST | AV Mono*1 | 11 KEY | Colour SW*2 &*1 |
|---|---|---|---|---|---|---|---|---|
| **KV-XA21M81** | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 1 |

| | | |
|---|---|---|
| PIC Rotate*1 | Picture Rotation feature Switch | 0 = disabled, 1 = enabled |
| 2199 Curve*1 | 2199 Volume Curve Selection | 0 = Others, 1 = 2199 Volume Curve. |
| Auto PIC | Auto Picture Improvement | 0 = inactive 1 = active |
| A-TVsys | Auto TV System in Auto Program | 0 = disabled, 1 = enabled |
| US ST | USA Stereo | 0 = disabled, 1 = enabled |
| AV MONO*1 | AV Mono models | 0 = Stereo, 1 = Mono (No Balance & Surround selection) |
| 11 Key | Front Key Selection | 0 = 7 key model, 1 = 11 key model |
| Color SW*2 & *1 | Color Data Selection in Dynamic Mode | 0 = 65 (No PIP), 1 = 57 (PIP) |

Note: *1 - For KV-XA21/XG25 models only
*2 - For KV-XA34/29/25 models only

**No. OPB3 OP4**

| Item | (unused) | (unused) | (unused) | (unused) | (unused) | (unused) | AP_XG*1 | (unused) |
|---|---|---|---|---|---|---|---|---|
| **KV-XA21M81** | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |

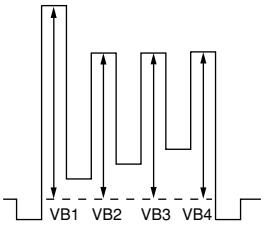
| | | |
|---|---|---|
| AP_XG*1 | To select the XG AP (board B6) | 0: No; 1 = Yes |

Note: *1 - For KV-XA21/XG25 models only

## 4-3. PICTURE QUALITY ADJUSTMENTS

### SUB COLOR ADJUSTMENT

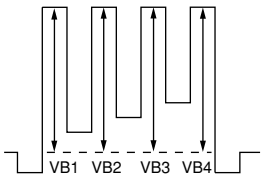
1. Select Video.
2. Input a PAL color-bar.
3. Set to the following condition:
   PICTURE 100%, BRIGHTNESS 50%, COLOR 50%
4. Connect an oscilloscope to pin ① (B OUT) of CN305, A board.
5. Set to Service Mode and select SAJ 'SCL' with [1] and [4] of the commander then adjust to VB2=VB3=VB4 with [3] and [6].
6. Press [MUTING] → [0] of the commander to write the data.
7. Adjust SAJ 'SCL' as step 3 to 5 when receiving NTSC color-bar.
8. Select the 'Wide' mode, write the 'same data-3 steps' for both PAL and NTSC input.




VB2 = VB3 = VB4

### SUB HUE ADJUSTMENT

1. Select Video.
2. Input a NTSC 3.58 color-bar, into Video.
3. Set the following condition:
   PICTURE 100%, BRIGHTNESS 50%, COLOR 50%
4. Connect an oscilloscope to pin ① (B OUT) of CN305, A board.
5. Select SAJ O1 "SHU" with [1] and [4] of the commander by setting to Service Mode and adjust to VB1=VB2=VB3=VB4 with [3] and [6].




VB1 = VB2 = VB3 = VB4

6. Press [MUTING] → [0] of the commander to write the data.
7. Adjust SAJ O1 "SHU" as step 3 to 6 when receiving TV mode.

## 4-4. DEFLECTION ADJUSTMENT

**NORMAL MODE (50Hz)**

1. Set to Service Mode.
2. Using the [1] and [4] button, select category GEO (Service Mode).
3. Raise/lower the data using the [3] and [6] buttons.
   Select and adjust the following items to obtain optimum image.

Service Item

| | | | |
|---|---|---|---|
| GEO : | 00 | HPS | H POSITION |
| | 01 | HSZ | H SIZE |
| | 02 | PAP | PIN AMP |
| | 03 | TLT | TRAPEZIUM |
| | 04 | VPS | V POSITION |
| | 05 | VSZ | V SIZE |
| | 06 | SCO | S CORRECTION |
| | 07 | VLN | V LINEARITY |
| | 08 | BOW | AFC BOW |
| | 09 | AGL | AFC ANGLE |
| | 0A | UPN | UPPER CORNER PIN |
| | 0B | LPN | LOWER CORNER PIN |

**NORMAL MODE (60Hz)**

11. Input 525/60Hz signal.
12. Using the [1] and [4] buttons select category GEO (Service Mode).
13. Select and adjust the following items to obtain obtimum image.
    Raise/lower the data with the [3] and [6] buttons.

Service Item

| | | | |
|---|---|---|---|
| GEO : | 00 | HPS | H POSITION |
| | 01 | HSZ | H SIZE |
| | 02 | PAP | PIN AMP |
| | 03 | TLT | TRAPEZIUM |
| | 04 | VPS | V POSITION |
| | 05 | VSZ | V SIZE |
| | 06 | SCO | S CORRECTION |
| | 07 | VLN | V LINEARITY |
| | 08 | BOW | AFC BOW |
| | 09 | AGL | AFC ANGLE |
| | 0A | UPN | UPPER CORNER PIN |
| | 0B | LPN | LOWER CORNER PIN |

Note:

For Deflection Adjustment, set PICTURE MODE to "SOFT".

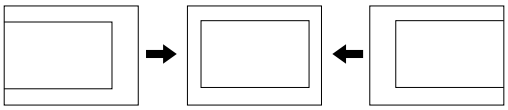
## 4-5. A BOARD ADJUSTMENT AFTER IC003 (MEMORY) REPLACEMENT

1. Enter to Service Mode.
2. Press commander buttons [5] and [0] (Data Initialize), and [2] and [0] (Data Copy) to initialize the data.
3. Call each item number and check if the respective screen shows the normal picture.
   In cases where items are not well adjusted, rectify the fine adjustment.
   Write the data per each item number ([MUTING] +[0]).
4. Select item numbers "OPB00" (OP1), "OPB01" (OP2), "OPB 02" (OP3) and "OPB 03" (OP4) respectively set the bit per model with command buttons [3] and [6].
5. Press commander buttons [8] and [0] (Test Normal) to return to the data that was set on the shipment from the factory.
   (This will also cancel Service Mode.)

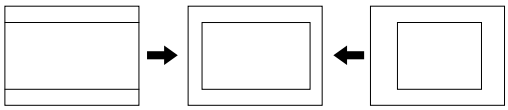
## 4-6. PICTURE DISTORTION ADJUSTMENT

Item Number 00 – 0B

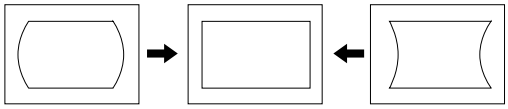
GEO 0 HPS (H POSITION)



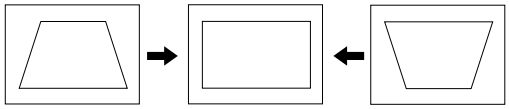
GEO 1 HSZ (H SIZE)



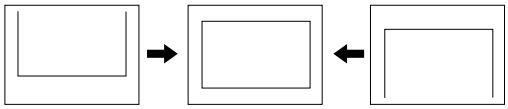
GEO 2 PAP (PIN AMP)



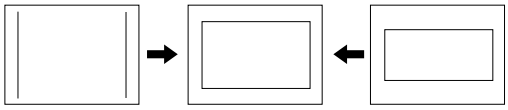
GEO 3 TLT (TRAPEZIUM)



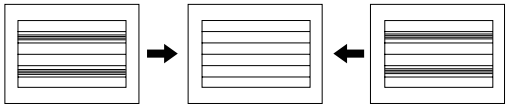
GEO 4 VPS (V POSITION)



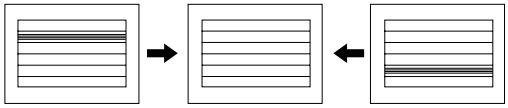
GEO 5 VSZ (V SIZE)



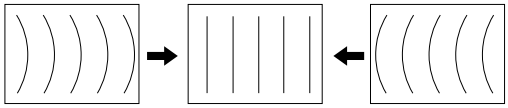
GEO 6 SCO (VERTICAL S-Correction)



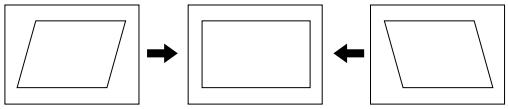
GEO 7 VLN (V LINEARITY)



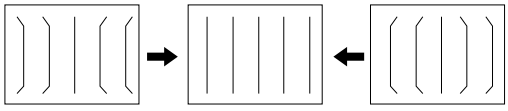
GEO 8 BOW (AFC.BOW)



GEO 9 AGL (AFC.ANGLE)

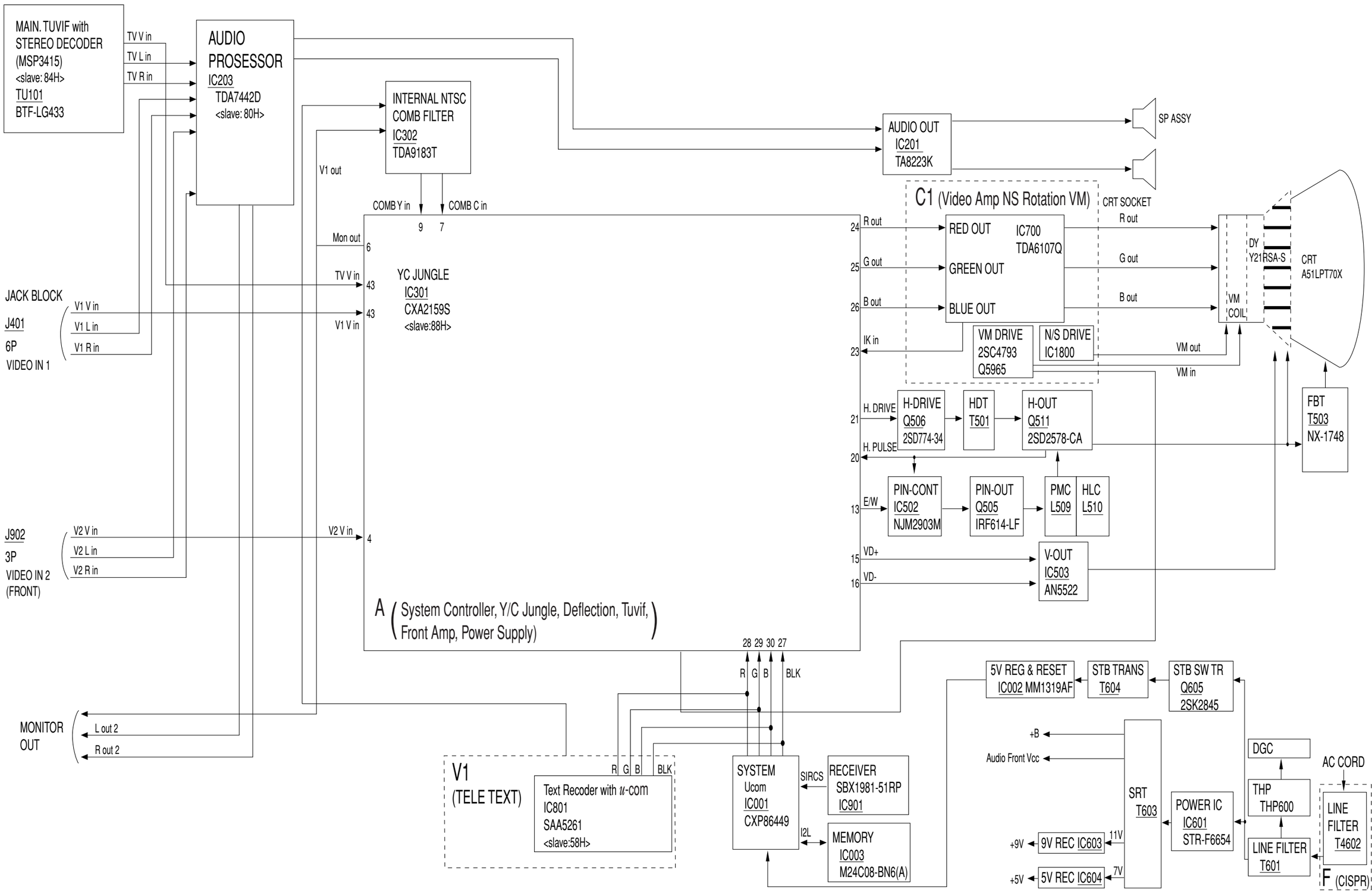


GEO 0A UPN (UPPER CORNER PIN)
GEO 0B LPN (LOWER CORNER PIN)

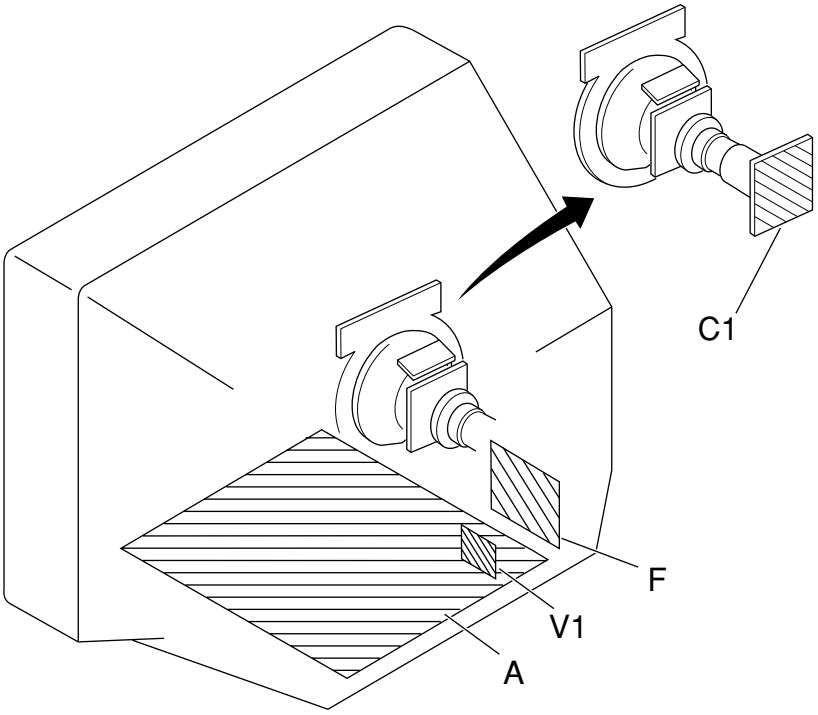


# SECTION 5
# DIAGRAMS

## 5-1. BLOCK DIAGRAM



## 5-2. CIRCUIT BOARDS LOCATION



## 5-3. SCHEMATIC DIAGRAM

**Note:**

- All capacitors are in μF unless otherwise noted.
- All electrolytic capacitors are rated at 50V unless otherwise noted.
- All resistors are in ohms.
  kΩ = 1000Ω, MΩ = 1000kΩ
- Indication of resistance which does not have rating electrical power is as follows.

  Pitch: 5 mm
  Rating electrical power 1/4W (CHIP: 1/10W)

-  : nonflammable resistor.
- △ : internal component.
- ▭ : panel designation or adjustment for rrepair.
- All variable and adjustable resistors have characteristic curve B unless otherwise noted.
- **Redings are taken with a color-bar signal input.**
  **no mark : Common**
  **( ) : PAL**
  **[ ] : NTSC 3.58**
- **Readings are taken with a 10MΩ digital multimeter.**
- **Voltage are dc with respect to ground unless otherwise noted.**
- **Voltage variations may be noted due to normal production tolerances.**
- **All voltage are in V.**
- **✻ : Cannot be measured.**
- **Circled numbers are waveform references.**
- **▬▬ : B +bus.**
- **▪ ▪ ▪ : B –bus.**
- **⇨ : signal path.**

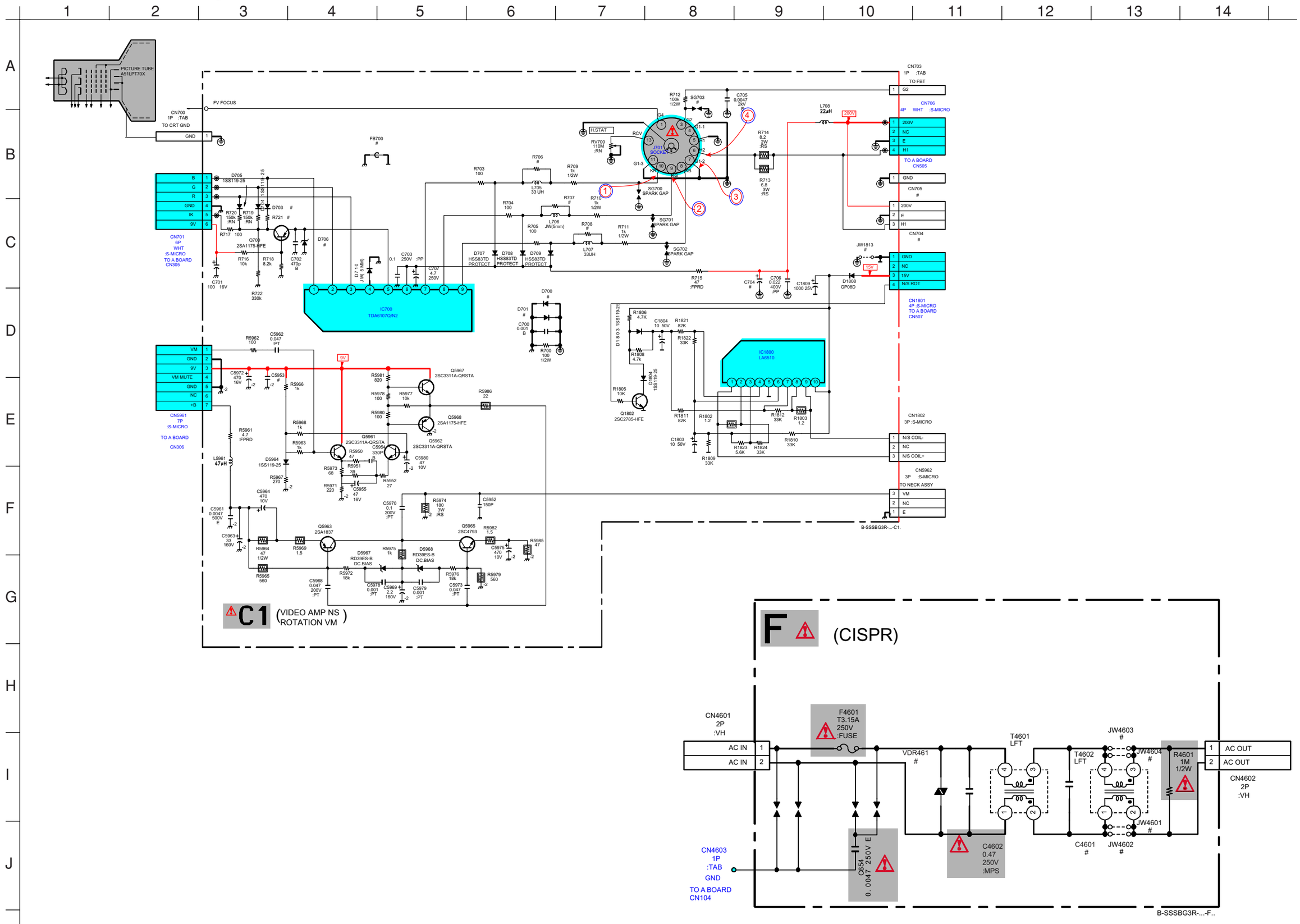
**Reference information**

| | | |
|---|---|---|
| RESISTOR | : RN | METAL FILM |
| | : RC | SOLID |
| | : FPRD | NONFLAMMABLE CARBON |
| | : FUSE | NONFLAMMABLE FUSIBLE |
| | : RS | NONFLAMMABLE METAL OXIDE |
| | : RB | NONFLAMMABLE CEMENT |
| | : RW | NONFLAMMABLE WIREWOUND |
| | : ✻ | ADJUSTMENT RESISTOR |
| COIL | : LF-8L | MICRO INDUCTOR |
| CAPACITOR | : TA | TANTALUM |
| | : PS | STYROL |
| | : PP | POLYPROPYLENE |
| | : PT | MYLAR |
| | : MPS | METALIZED POLYESTER |
| | : MPP | METALIZED POLYPROPYLENE |
| | : ALB | BIPOLAR |
| | : ALT | HIGH TEMPERATURE |
| | : ALR | HIGH RIPPLE |

**Note: The component identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.**

KV-XA21M81 RM-952

## (1) C1 and F Boards Schematic Diagrams



KV-XA21M81
RM-952

## (2) A Board Schematic Diagram

**A (1/2)**

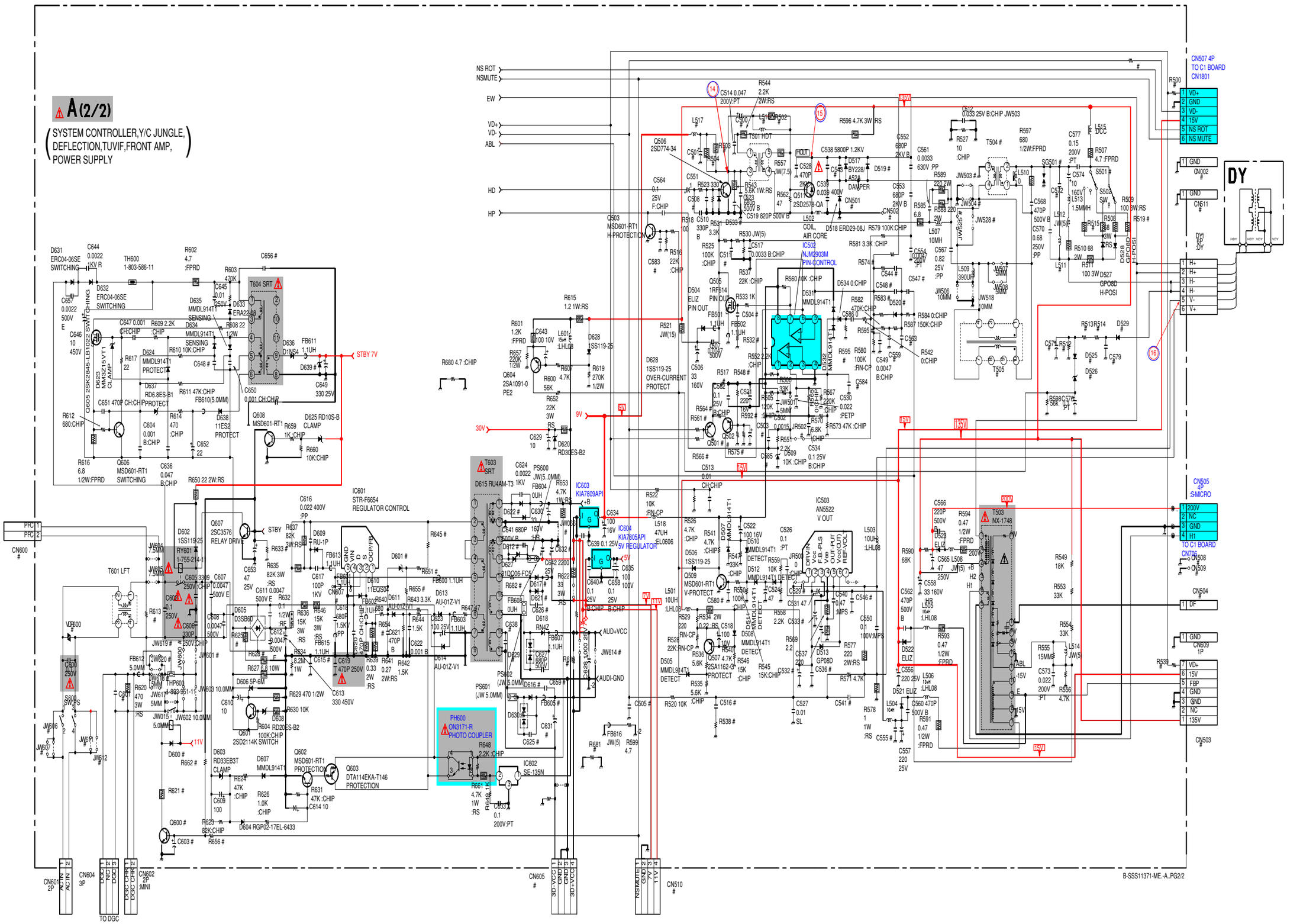
SYSTEM CONTROLLER,Y/C JUNGLE,
DEFLECTION,TUVIF,FROMT AMP,
POWER SUPPLY

1 2 3 4 5 6 7 8 9 10 11 12 13 14

A B C D E F G H I J

## ⚠A(2/2)

(SYSTEM CONTROLLER,Y/C JUNGLE, DEFLECTION,TUVIF,FRONT AMP, POWER SUPPLY)


NS ROT
NSMUTE
EW
VD+
VD-
ABL
HD
HP
CN507 4P
TO C1 BOARD
CN1801
VD+
GND
VD-
15V
NS ROT
MS MUTE
DY
H+
H+
H-
H-
V-
V+
IC601
STR-F6654
REGULATOR CONTROL
IC603
KIA7809API
+9V REGULATOR
IC604
KIA7805API
+5V REGULATOR
IC502
NJM2903M
PIN CONTROL
IC503
AN5522
V OUT
IC602
SE-135N
PH600
ON3171-R
PHOTO COUPLER
T603
SRT
D615 RU4AM-T3
T604 SRT
T501 HDT
T503
NX-1748
T504 #
T505
Q601
2SD2114K SWITCH
Q602
MSD601-RT1
PROTECTION
Q603
DTA114EKA-T146
PROTECTION
Q604
2SA1091-0
PE2
Q605 2SK2845-LB1022 SWITCHING
Q606
MSD601-RT1
SWITCHING
Q607
2SC3576
RELAY DRIVE
Q608
MSD601-RT1
CLAMP
Q501 #
Q502
Q505
1RF614
PIN OUT
Q506
2SD774-34
Q507
2SA1162-O
PROTECT
Q509
MSD601-RT1
V-PROTECT
Q510
2SD2578-OA
Q600 #
Q603 #
D600 #
D602
1SS119-25
D603
RD33EB3T
CLAMP
D604 RGP02-17EL-6433
D605
D3SB60
D606 5P-6M
D607
MMDL914T1
D608
RD20ES-B2
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RU-1P
D610
11EQS04
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AU-01Z-V1
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AU-01Z-V1
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AU-01Z-V1
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D616 #
D617 #
D618
RN4Z
D619 #
D620
RD3CES-B2
D621 #
D622 #
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MMDL914T1
PROTECT
D625 RD10S-B
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ERC04-06SE
SWITCHING
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ERA22-08
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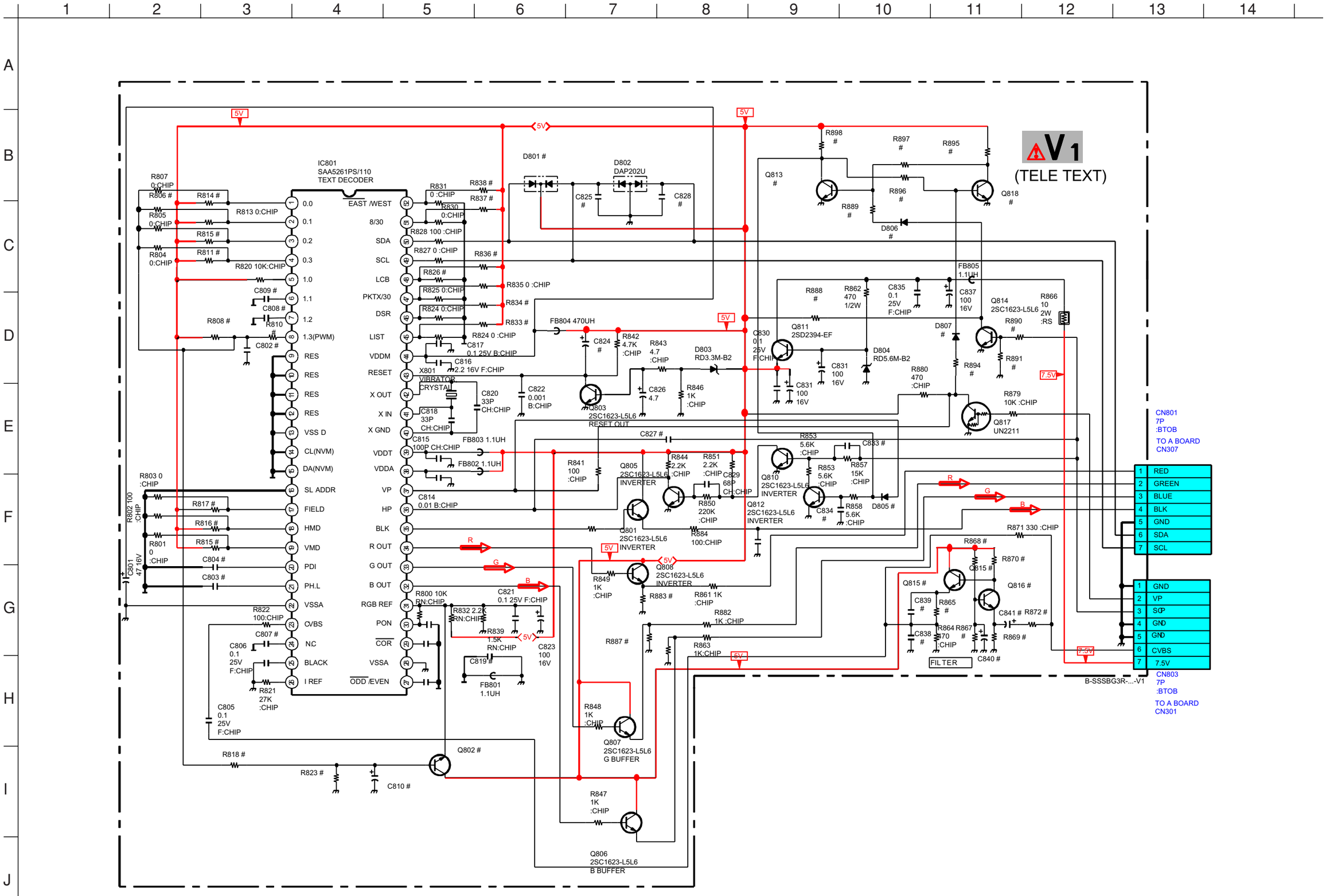
KV-XA21M81
RM-952

## (3) V1 Board Schematic Diagram



## 5-4. VOLTAGE MEASUREMENT

A(1/2) BOARD VOLTAGE LIST

| Ref | Pin No | Voltage[v] |
|---|---|---|
| IC001 | 1 | 0 |
| | 2 | 4.5 |
| | 3 | 0.5 |
| | 4 | 5.0 |
| | 5 | 5.0 |
| | 6 | 0 |
| | 7 | 4.0 |
| | 8 | 4.8 |
| | 9 | 0.5 |
| | 10 | 4.8 |
| | 11 | 5.0 |
| | 12 | 0 |
| | 13 | 2.1 |
| | 14 | 2.0 |
| | 15 | 5.0 |
| | 16 | 5.0 |
| | 17 | 0 |
| | 18 | 0 |
| | 19 | 2.0 |
| | 20 | 0.4 |
| | 21 | 5.0 |
| | 22 | 0 |
| | 23 | 5.0 |
| | 24 | 0.4 |
| | 25 | 0 |
| | 26 | 5.0 |
| | 27 | 4.8 |
| | 28 | 5.0 |
| | 29 | 0 |
| | 30 | 0 |
| | 31 | 0 |
| | 32 | 0 |
| | 33 | 5.0 |
| | 34 | 0 |
| | 35 | 0 |
| | 36 | 2.3 |
| | 37 | 2.5 |
| | 38 | 4.9 |
| | 39 | 5.0 |
| | 40 | 0 |
| | 41 | 0.4 |
| | 42 | 0.4 |
| | 43 | 0 |
| | 44 | 5.0 |
| | 45 | 5.0 |
| | 46 | 4.6 |
| | 47 | 5.0 |
| | 48 | 4.4 |
| | 49 | 0 |
| | 50 | 2.0 |
| | 51 | 0 |
| | 52 | 5.0 |
| IC002 | 1 | 0 |
| | 2 | 5.0 |
| | 3 | 4.9 |
| | 4 | 7.3 |
| | 5 | 5.0 |
| | 6 | 0 |
| | 7 | 0 |
| IC003 | 1 | 0 |
| | 2 | 0 |
| | 3 | 0 |
| | 4 | 0 |
| | 5 | 5.0 |
| | 6 | 5.0 |
| | 7 | 0 |
| | 8 | 5.0 |
| IC100 | 1 | 4.8 |
| | 2 | 4.8 |
| | 3 | 0 |
| IC201 | 1 | 0 |
| | 2 | 19.6 |
| | 3 | 10.4 |
| | 4 | 20.0 |
| | 5 | 10.5 |
| | 6 | 19.6 |
| | 7 | 0 |
| | 8 | 20.0 |
| | 9 | 10.3 |
| | 10 | 0.6 |
| | 11 | 0 |
| | 12 | 0 |
| | 13 | 0 |
| | 14 | 0.6 |
| | 15 | 0 |
| IC203 | 1 | 4.4 |
| | 2 | 4.4 |
| | 3 | 4.4 |
| | 4 | 4.4 |
| | 5 | 4.4 |
| | 6 | 4.4 |
| | 7 | 4.4 |
| | 8 | 4.4 |
| | 9 | 4.4 |
| | 10 | 4.4 |
| | 11 | 4.4 |
| | 12 | 4.4 |
| | 13 | 4.4 |
| | 14 | 4.4 |
| | 15 | 4.4 |
| | 16 | 4.4 |
| | 17 | 4.4 |
| | 18 | 4.4 |
| | 19 | 4.4 |
| | 20 | 0 |
| | 21 | 4.5 |
| | 22 | 4.5 |
| | 23 | 4.4 |
| | 24 | 8.8 |
| | 25 | 0 |
| | 26 | 3.7 |
| | 27 | 3.7 |
| | 28 | 4.4 |
| IC301 | 1 | 3.4 |
| | 2 | 5.0 |
| | 3 | 2.4 |
| | 4 | 5.0 |
| | 5 | 4.8 |
| | 6 | 4.3 |
| | 7 | 1.5 |
| | 8 | 3.8 |
| | 9 | 4.9 |
| | 10 | 3.8 |
| | 11 | 5.0 |
| | 12 | 0 |
| | 13 | 3.8 |
| | 14 | 2.3 |
| | 15 | 3.5 |
| | 16 | 3.4 |
| | 17 | 5.4 |
| | 18 | 7.6 |
| | 19 | 0.8 |
| | 20 | 3.6 |
| | 21 | 3.0 |
| | 22 | 3.8 |
| | 23 | 3.0 |
| | 24 | 1.5 |
| | 25 | 1.5 |
| | 26 | 1.6 |
| | 27 | 0 |
| | 28 | 4.5 |
| | 29 | 4.5 |
| | 30 | 4.5 |
| | 31 | 8.8 |
| | 32 | 4.1 |
| | 33 | 4.1 |
| | 34 | 3.6 |
| | 35 | 8.8 |
| | 36 | 4.5 |
| | 37 | 4.5 |
| | 38 | 0 |
| | 39 | 4.1 |
| | 40 | 4.7 |
| | 41 | 4.7 |
| | 42 | 0 |
| | 43 | 5.1 |
| | 44 | 4.9 |
| | 45 | 7.1 |
| | 46 | 5.0 |
| | 47 | 8.7 |
| | 48 | 0.2 |
| | 49 | [5.1] (4.3) |
| | 50 | 0 |
| | 51 | 0 |
| | 52 | * |
| IC302 | 1 | 0.9 |
| | 2 | 0 |
| | 3 | 1.3 |
| | 4 | 0 |
| | 5 | 4.9 |
| | 6 | 4.9 |
| | 7 | 1.0 |
| | 8 | 0 |
| | 9 | 0.5 |
| | 10 | 0 |
| | 11 | 0 |
| | 12 | 1.6 |
| | 13 | 0 |
| | 14 | 1.5 |
| | 15 | 0 |
| | 16 | 1.5 |
| IC502 | 1 | 1.3 |
| | 2 | 3.6 |
| | 3 | 1.2 |
| | 4 | 0 |
| | 5 | 3.4 |
| | 6 | 3.0 |
| | 7 | 6.8 |
| | 8 | 8.9 |
| IC503 | 1 | 1.0 |
| | 2 | 13.6 |
| | 3 | -12.4 |
| | 4 | -13.6 |
| | 5 | 0.2 |
| | 6 | 13.8 |
| | 7 | 1.0 |
| IC601 | 1 | [3.3](1.8) |
| | 2 | 1.7 (0.2) |
| | 3 | 113.3 |
| | 4 | 19.0(17.5) |
| | 5 | 1.6(0.1) |

A (2/2) BOARD VOLTAGE LIST

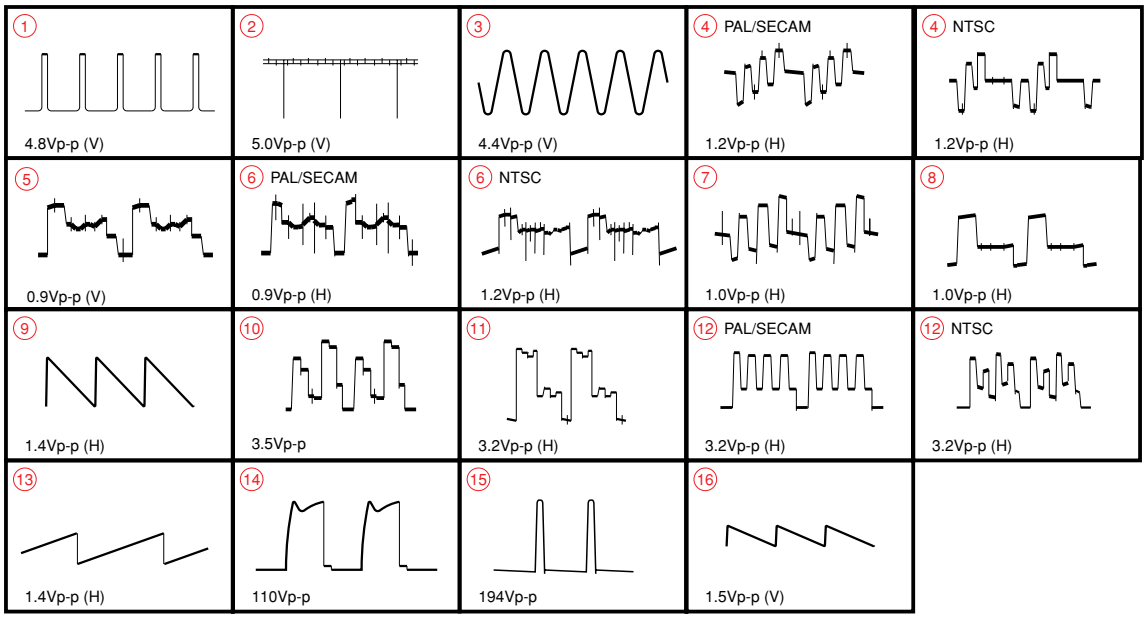
| Ref | Pin No | Voltage[v] | Ref | Pin No | Voltage[v] | Ref | Pin No | Voltage[v] |
|---|---|---|---|---|---|---|---|---|
| IC602 | 1 | 121.1 | Q306 | B | 1.5 | Q505 | D | 8.6 |
| | 2 | 135.0 | | C | 8.1 | | G | 6.9 |
| | 3 | 0 | | E | 0.9 | | S | 0 |
| IC603 | I | 12.8 | Q307 | B | 4.3 | Q506 | B | -0.4 |
| | G | 0 | | C | 8.7 | | C | 48.6 |
| | O | 8.9 | | E | 3.7 | | E | 0 |
| IC604 | I | 10.5 | Q308 | B | 3.6 | Q507 | B | 13.0 |
| | G | 0 | | C | 0.5 | | C | 0 |
| | O | 5.0 | | E | 0.8 | | E | 13.5 |
| IC901 | 1 | 4.9 | Q310 | B | 0.2 | Q509 | B | 0.6 |
| | 2 | 0 | | C | 4.9 | | C | 0.1 |
| | 3 | 4.7 | | E | 0 | | E | 0 |
| Q002 | B | 0 | Q312 | B | 5.3 | Q511 | B | 0 |
| | C | 5.0 | | C | 0 | | C | 122.6 |
| | E | 0 | | E | 7.0 | | E | 0 |
| Q101 | B | 2.8 | Q313 | B | 0 | Q600 | B | 0 |
| | C | 8.9 | | C | 12.7 | | C | 0 |
| | E | 2.2 | | E | 0 | | E | 0 |
| Q201 | B | 0 | Q314 | B | 0.5 | Q604 | B | 133.9 |
| | C | 0 | | C | 0 | | C | 0 |
| | E | 0 | | E | 1.0 | | E | 134.3 |
| Q202 | B | 0 | Q315 | B | 0 | Q605 | D | 121.6 |
| | C | 0 | | C | 1.6 | | G | -0.4 |
| | E | 0 | | E | 0 | | S | -2.1 |
| Q205 | B | 0 | Q316 | B | 4.1 | Q606 | B | -1.5 |
| | C | 10.3 | | C | 0 | | C | -0.5 |
| | E | 0 | | E | 4.7 | | E | -2.1 |
| Q206 | B | 0 | Q317 | B | 4.1 | Q607 | B | 0.7 |
| | C | 0 | | C | 0 | | C | 0 |
| | E | 0 | | E | 4.7 | | E | 0 |
| Q207 | B | 0 | Q401 | B | 0 | Q608 | B | 0 |
| | C | 0 | | C | 0 | | C | 0.7 |
| | E | 0 | | E | 0 | | E | 0 |
| Q301 | B | 12.8 | Q402 | B | 0 | Q901 | B | 0.1 |
| | C | 0 | | C | 0 | | C | 5.0 |
| | E | 12.6 | | E | 0 | | E | 0.1 |
| Q302 | B | 1.5 | Q403 | B | 4.5 | Q902 | B | 0 |
| | C | 8.1 | | C | 0 | | C | 5.0 |
| | E | 0.9 | | E | 5.2 | | E | 0 |
| Q303 | B | 8.1 | Q404 | B | 4.5 | PH600 | 1 | 128.7 |
| | C | 1.5 | | C | 0 | | 2 | 127.7 |
| | E | 8.7 | | E | 5.2 | | 3 | 3.6 |
| Q305 | B | 8.1 | Q503 | B | 0 | | 4 | 17.5 |
| | C | 1.8 | | C | 3.6 | | | |
| | E | 8.7 | | E | 0 | | | |

C1 BOARD VOLTAGE LIST

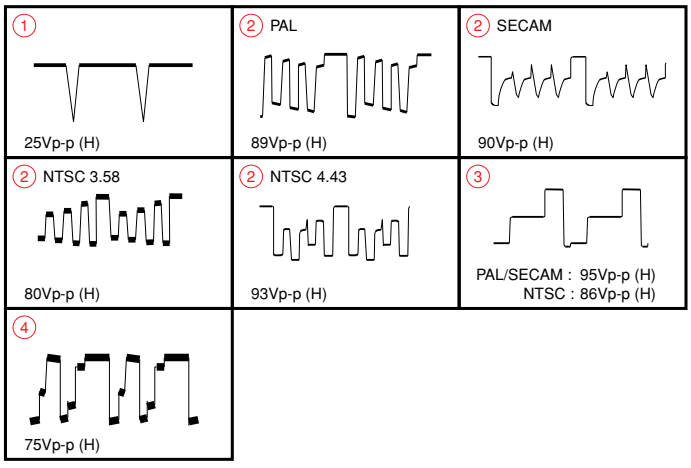
| Ref | Pin No | Voltage[v] | Ref | Pin No | Voltage[v] | Ref | Pin No | Voltage[v] |
|---|---|---|---|---|---|---|---|---|
| IC700 | 1 | 1.6 | | 8 | 6.6 | Q5962 | B | 2.4 |
| | 2 | 1.6 | | 9 | 6.6 | | C | 5.3 |
| | 3 | 1.5 | | 10 | 13.1 | | E | 1.8 |
| | 4 | 0 | J701 | G2 | [325.8](328.2) | Q5963 | B | 134.1 |
| | 5 | 4.9 | | H1 | 0 | | C | 67.1 |
| | 6 | 194.5 | | KB | [155.8](150.3) | | E | 134.7 |
| | 7 | 160.5 | | KG | [153.7](155.7) | Q5965 | B | 0.9 |
| | 8 | [157.4](155) | | KR | [160.8](154.5) | | C | 67.1 |
| | 9 | [155.3](150) | Q700 | B | 4.5 | | E | 0.3 |
| IC1800 | 1 | 6.7 | | C | 3.6 | Q5967 | B | 5.9 |
| | 2 | 6.7 | | E | 4.9 | | C | 8.9 |
| | 3 | 6.7 | Q1802 | B | 0.3 | | E | 5.6 |
| | 4 | 6.6 | | C | 3.6 | Q5968 | B | 5.3 |
| | 5 | 0 | | E | 0 | | C | 0 |
| | 6 | 6.6 | Q5961 | B | 2.4 | | E | 5.6 |
| | 7 | 6.6 | | C | 8.9 | | | |
| | | | | E | 1.8 | | | |

## 5-5. WAVEFORMS

### A BOARD WAVEFORMS




### C1 BOARD WAVEFORMS



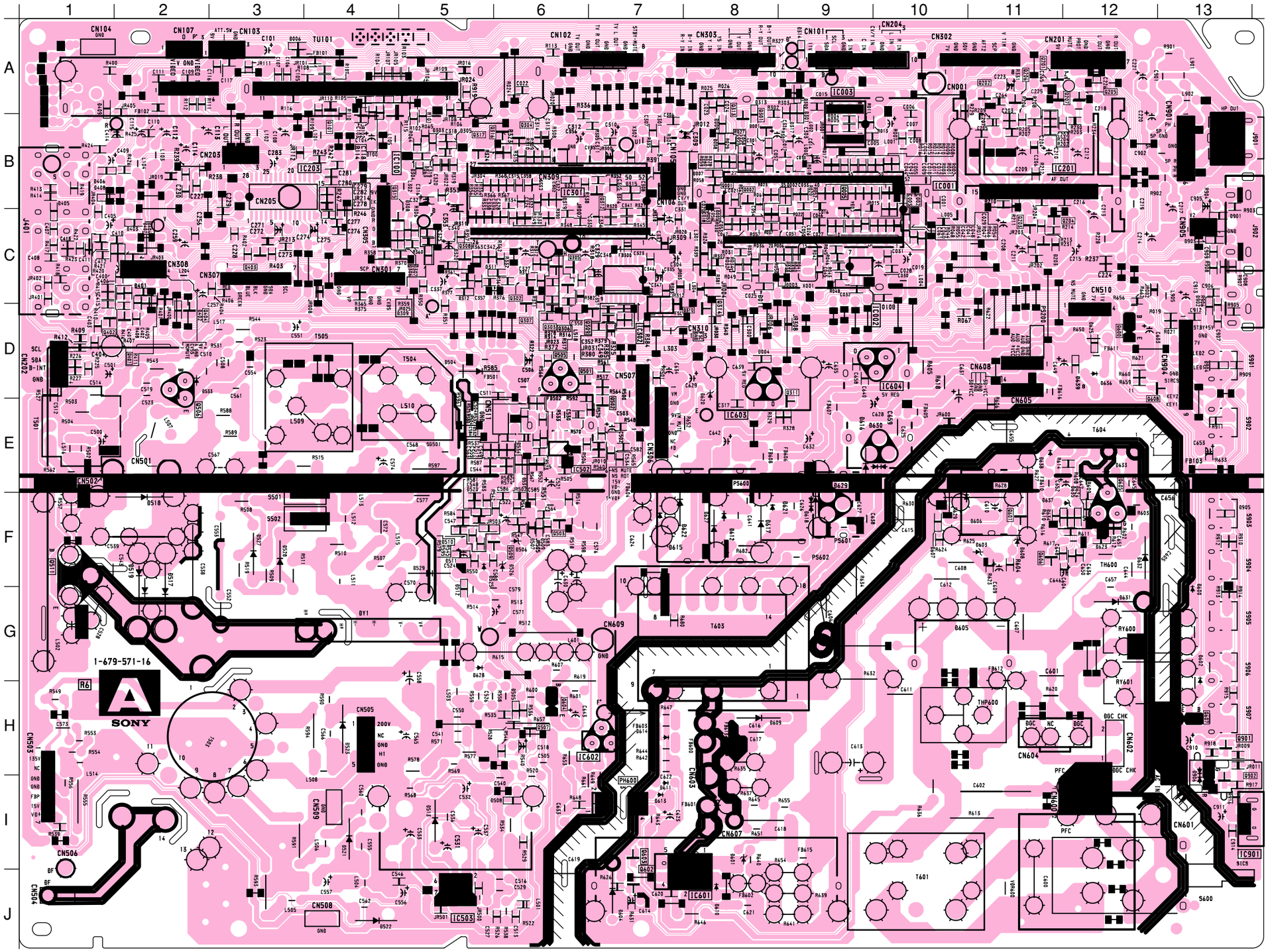
## 5-6. PRINTED WIRING BOARDS AND PARTS LOCATION

### PRINTED WIRING BOARDS

**A** [SYSTEM CONTROLLER, Y/C JUNGLE, DEFLECTION, TUVIF, FRONT AMP, POWER SUPPLY, AUDIO AMP/TONE CONTROLLER]

**NOTE:**
The circuit indicated at left contains high voltage of over 1220 Vp-p. Please pay attention when inspecting or repairing it to prevent an electric shock.

**– A Board –**




### A BOARD

**IC**

| | |
|---|---|
| IC001 | B-10 |
| IC002 | D-10 |
| IC003 | A-9 |
| IC100 | B-4 |
| IC201 | B-12 |
| IC203 | B-4 |
| IC301 | B-6 |
| IC302 | D-7 |
| IC502 | E-6 |
| IC503 | J-5 |
| IC601 | J-8 |
| IC602 | H-7 |
| IC603 | E-8 |
| IC604 | D-10 |

**TRANSISTOR**

| | |
|---|---|
| Q001 | B-8 |
| Q002 | B-8 |
| Q005 | B-9 |
| Q101 | B-4 |
| Q201 | A-11 |
| Q202 | A-11 |
| Q203 | C-11 |
| Q204 | C-12 |
| Q205 | A-12 |
| Q206 | A-11 |
| Q207 | A-12 |
| Q301 | B-8 |
| Q302 | C-6 |
| Q303 | D-6 |
| Q304 | B-6 |
| Q305 | C-6 |
| Q306 | D-6 |
| Q307 | D-6 |
| Q308 | C-5 |
| Q310 | D-8 |
| Q311 | D-9 |
| Q312 | B-7 |
| Q313 | A-8 |
| Q314 | D-8 |
| Q315 | B-4 |
| Q316 | B-5 |
| Q317 | B-5 |
| Q401 | D-2 |
| Q402 | D-1 |
| Q403 | C-3 |
| Q404 | D-2 |
| Q501 | D-6 |
| Q502 | E-7 |
| Q503 | F-6 |
| Q505 | D-6 |
| Q506 | E-2 |
| Q507 | H-6 |
| Q509 | F-6 |
| Q511 | F-1 |
| Q600 | D-12 |
| Q601 | F-11 |
| Q602 | I-7 |
| Q603 | I-7 |
| Q604 | H-6 |
| Q605 | E-12 |
| Q606 | F-11 |
| Q607 | H-13 |
| Q608 | E-12 |
| Q901 | H-13 |
| Q902 | H-13 |

**DIODE**

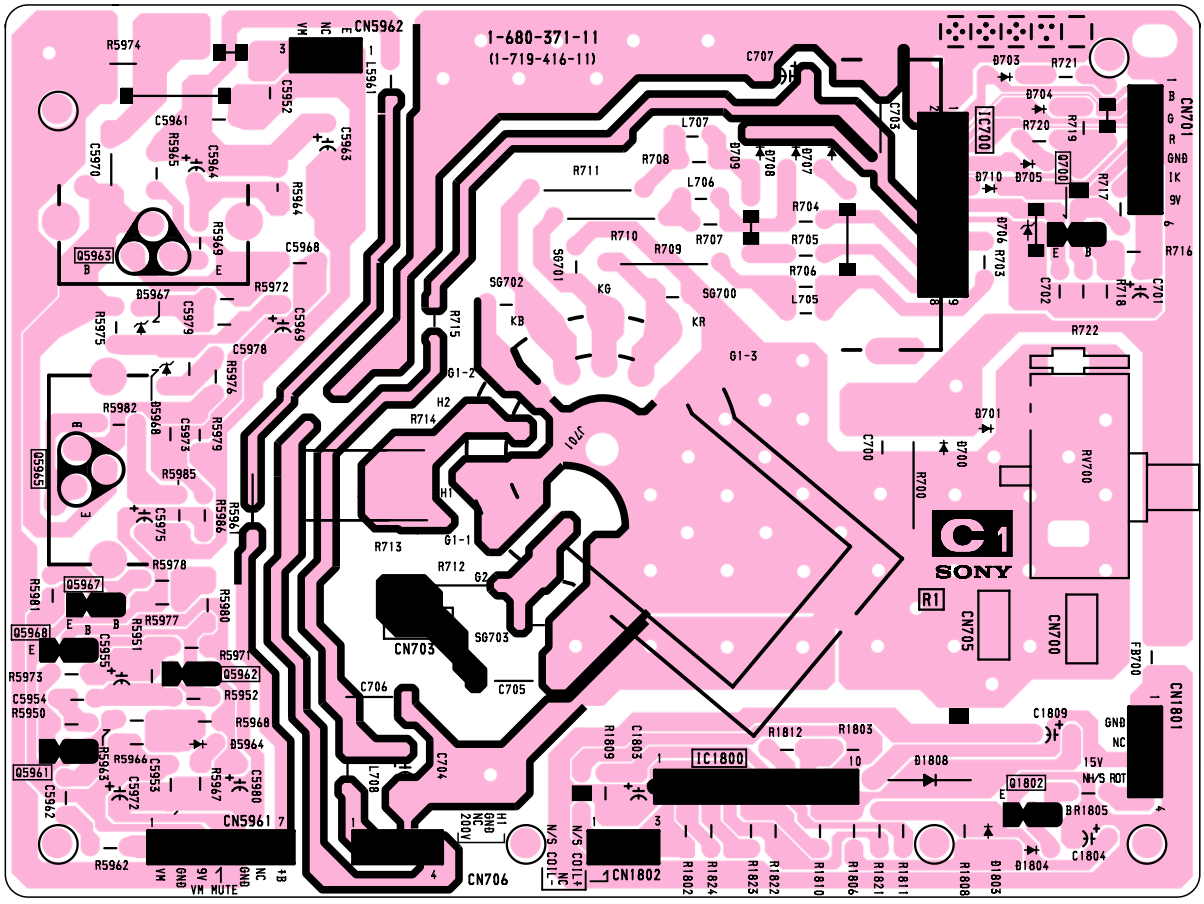
| | |
|---|---|
| D001 | B-8 |
| D002 | B-9 |
| D003 | C-9 |
| D004 | D-8 |
| D005 | B-8 |
| D006 | A-3 |
| D007 | B-8 |
| D008 | B-8 |
| D009 | B-8 |
| D010 | D-10 |
| D011 | C-8 |
| D100 | B-4 |
| D203 | C-11 |
| D300 | A-9 |
| D301 | B-9 |
| D303 | B-5 |
| D304 | B-5 |
| D305 | B-5 |
| D306 | C-5 |
| D307 | C-5 |
| D308 | B-5 |
| D309 | D-5 |
| D311 | C-5 |
| D312 | C-5 |
| D313 | A-8 |
| D314 | A-9 |
| D315 | B-7 |
| D316 | B-7 |
| D317 | B-9 |
| D319 | B-6 |
| D320 | C-5 |
| D321 | B-6 |
| D322 | B-6 |
| D401 | C-2 |
| D402 | D-2 |
| D403 | C-2 |
| D404 | C-2 |
| D405 | B-1 |
| D406 | B-1 |
| D407 | C-2 |
| D408 | B-1 |
| D409 | A-1 |
| D504 | D-5 |
| D505 | H-6 |
| D506 | F-6 |
| D507 | F-6 |
| D508 | I-6 |
| D510 | F-5 |
| D511 | F-5 |
| D512 | F-5 |
| D513 | I-5 |
| D517 | F-2 |
| D518 | F-2 |
| D519 | F-2 |
| D520 | E-5 |
| D521 | I-4 |
| D522 | J-4 |
| D523 | H-4 |
| D525 | F-5 |
| D526 | F-6 |
| D527 | F-3 |
| D528 | F-3 |
| D529 | F-5 |
| D531 | E-6 |
| D532 | E-5 |
| D533 | D-2 |
| D534 | E-6 |
| D600 | G-13 |
| D601 | I-8 |
| D602 | G-13 |
| D603 | F-11 |
| D604 | J-7 |
| D605 | G-10 |
| D606 | E-11 |
| D607 | F-10 |
| D608 | F-11 |
| D609 | H-8 |
| D610 | J-8 |
| D611 | J-7 |
| D612 | F-8 |
| D613 | I-7 |
| D615 | E-7 |
| D616 | E-9 |
| D617 | F-8 |
| D618 | F-9 |
| D620 | E-8 |
| D621 | F-9 |
| D622 | F-7 |
| D623 | F-12 |
| D624 | E-12 |
| D625 | D-12 |
| D627 | F-8 |
| D628 | G-5 |
| D629 | E-9 |
| D630 | E-10 |
| D631 | G-12 |
| D632 | F-12 |
| D633 | E-12 |
| D634 | F-11 |
| D635 | E-12 |
| D636 | D-12 |
| D637 | F-11 |
| D638 | E-11 |
| D639 | D-12 |
| D901 | C-13 |
| D902 | C-13 |
| D903 | C-13 |
| D904 | D-13 |
| D905 | F-13 |
| D906 | H-13 |
| PH600 | I-7 |

## PRINTED WIRING BOARDS

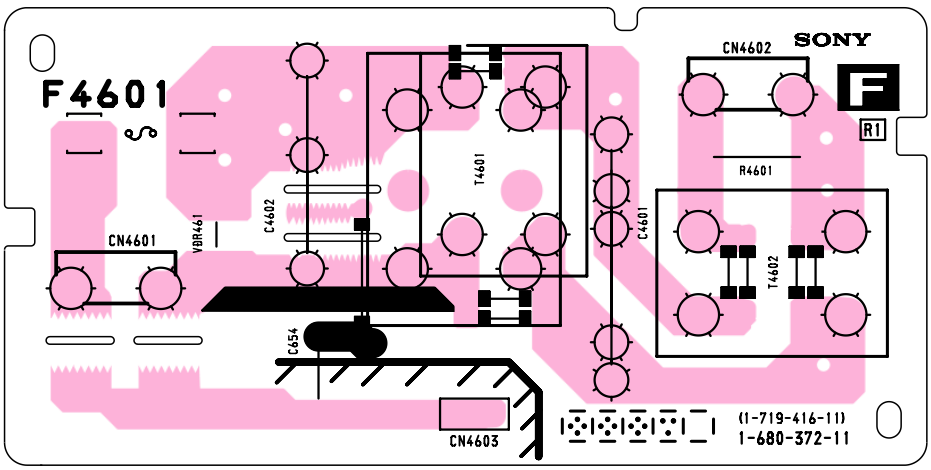
C1 [VIDEO AMP NS ROTATION VM]

F [CISPR]

### – C1 Board –



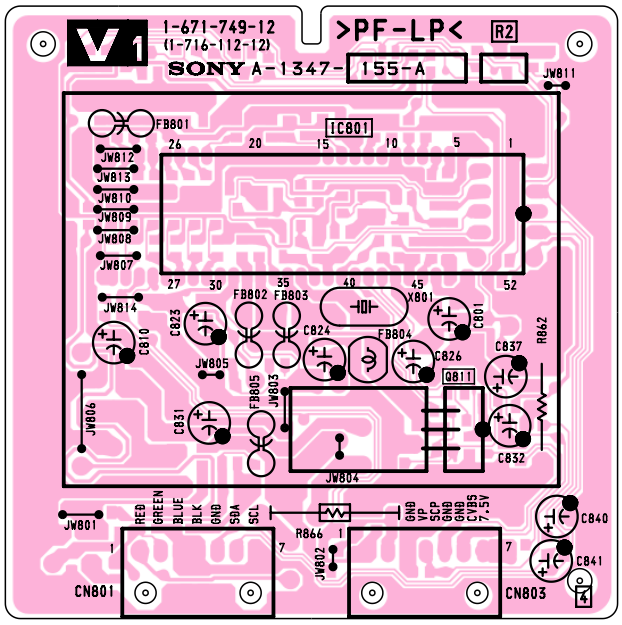

### – F Board –



## PRINTED WIRING BOARDS

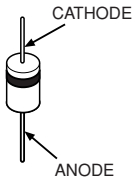
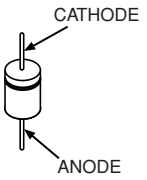
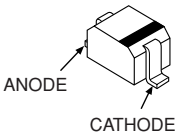
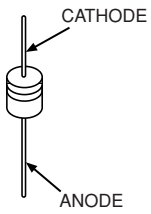
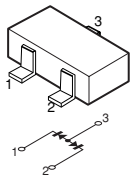
**V1** [TELETEXT]

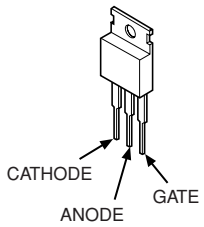
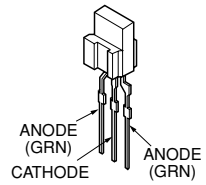
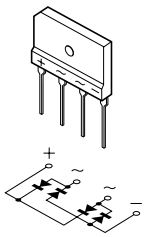
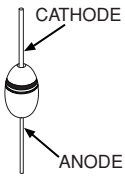
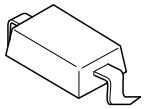
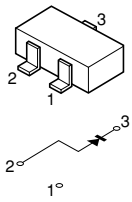
### – V1 Board –



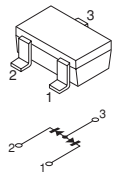
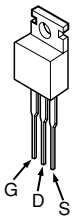
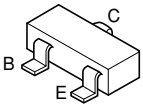
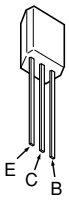
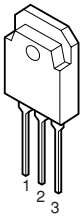
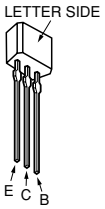
## 5-7 SEMICONDUCTORS

### DIODE

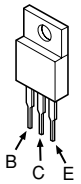
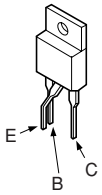
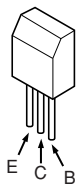
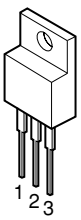
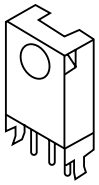
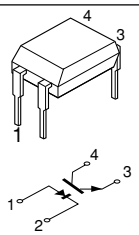
| | | | | | |
|---|---|---|---|---|---|
|  |  |  |  |  | |
| AU-01Z-V1<br>EL1Z<br>ERA22-08<br>ERC04-06SE<br>GP08D<br>HSS83TD<br>RD33EB3T<br>RGP02-17E-6433<br>RU4AM-T3<br>31DQ06-FC5 | ERD29-08J | RD5.1SB-T2<br>RD9.1S-B<br>RD10S-B | D1NS4<br>RD6.8ES-B1<br>RD6.8SB-T1<br>RD20ES-B2<br>RD30ES-B2<br>RD39-ES-B2<br>1SS119-25<br>11EQS04<br>11ES2 | 1SS302 | RN4Z |

| | | | | | |
|---|---|---|---|---|---|
|  |  |  |  |  |  |
| 5P-6M | SPB-25MVWF | D3SB60 | BY228 | MMDL914T1<br>MM3Z15VT1 | RD3.3M-B2<br>RD5.6M-B2 |

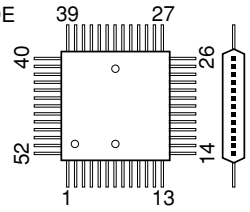
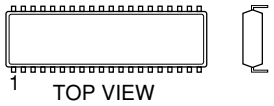
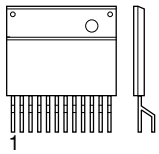
### TRANSISTOR

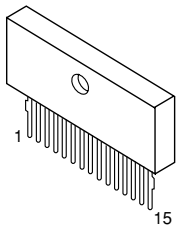
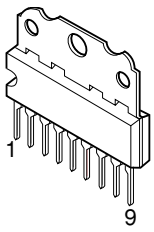
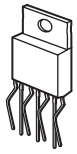
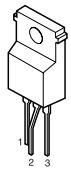
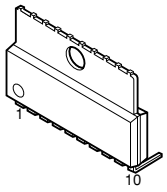
| | | | | | |
|---|---|---|---|---|---|
|  |  |  |  |  |  |
| DAP202U | IRF614 | DTA114EKA-T146<br>UN2213<br>UN2216<br>2SA1162-G<br>2SD2114K<br>MSD601-RT1<br>UN2211<br>2SC1623-L5L6 | 2SA1091-0<br>2SC3576 | 2SD2578-CA | 2SC2785-HFE<br>2SA1175-HFE<br>2SC3311A-QRSTA |

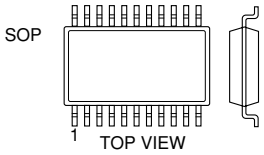
### IC

| | | | | | |
|---|---|---|---|---|---|
|  |  |  |  |  |  |
| 2SA1837<br>2SC4793<br>2SD2394-EF | 2SK2845-LB102 | 2SD774-34 | KIA7805-AP1 | SBX1981-51RP | ON3171-R |

## IC

| | | |
|---|---|---|
| MARKING SIDE VIEW<br>  | DIP<br>  <br>TOP VIEW<br><br>Dual In-line Package<br>Pin 6~98 | MARKING SIDE VIEW<br>  <br>Zig-zag In -line Package<br>Pin 6~99 |
| RU-1P | CXP86449-630S<br>CXA2159S<br>M24C08-BN6<br>TDA7442DO13TR<br>TDA9183T<br>SAA5261 | STR-F6654 |

| | | | | |
|---|---|---|---|---|
|  |  |  |  |  |
| TA8223K | TDA6107Q/N2 | AN5522 | SE-135N | LA6510 |




Single In -line Package
Pin 8~98

MM1319AFBE
NJM2903M

# SECTION 6
# EXPLODED VIEWS

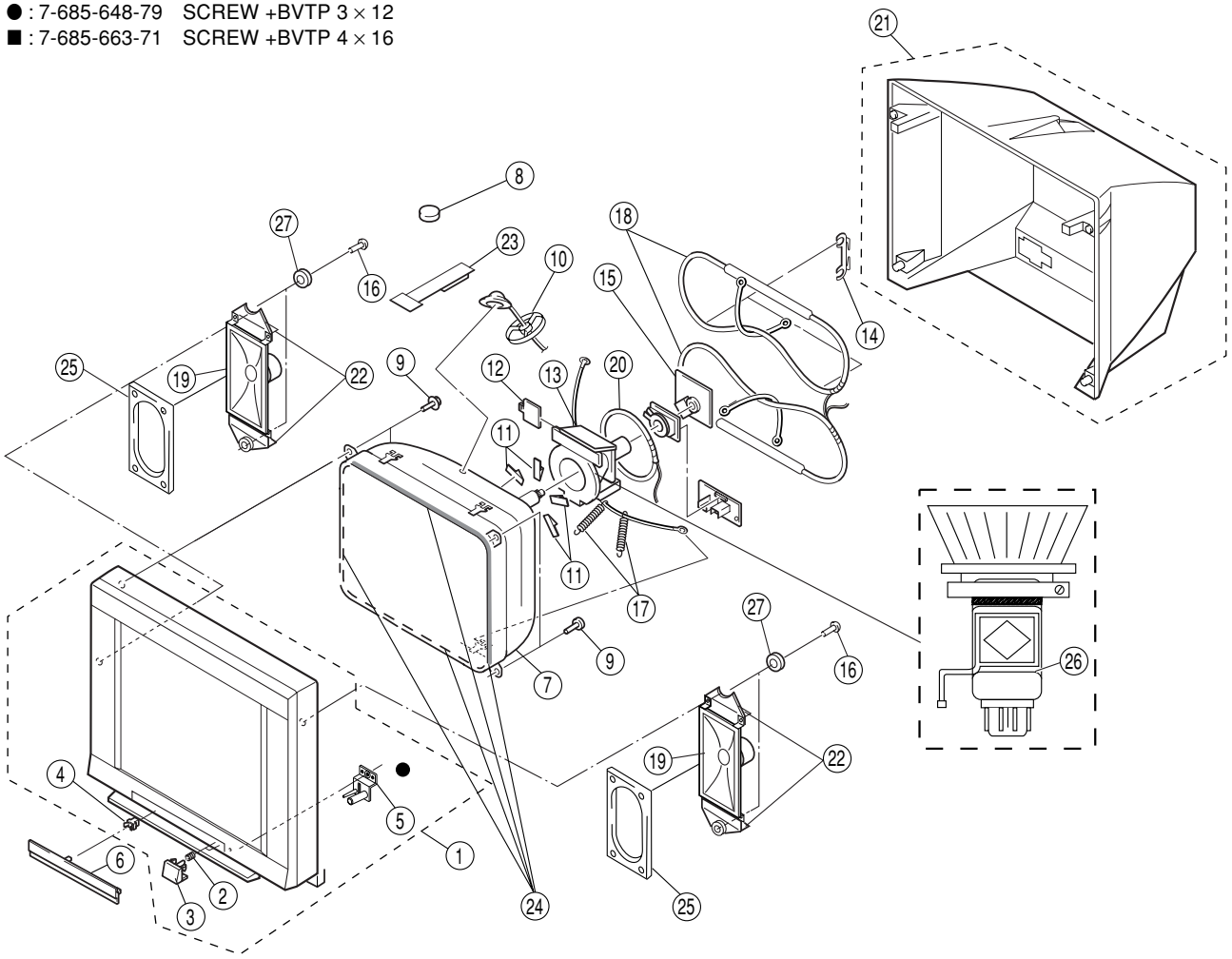
**NOTE:**

- Items with no part number and no description are not stocked because they are seldom required for routine service.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

## 6-1. PICTURE TUBE

● : 7-685-648-79 SCREW +BVTP 3 × 12
■ : 7-685-663-71 SCREW +BVTP 4 × 16

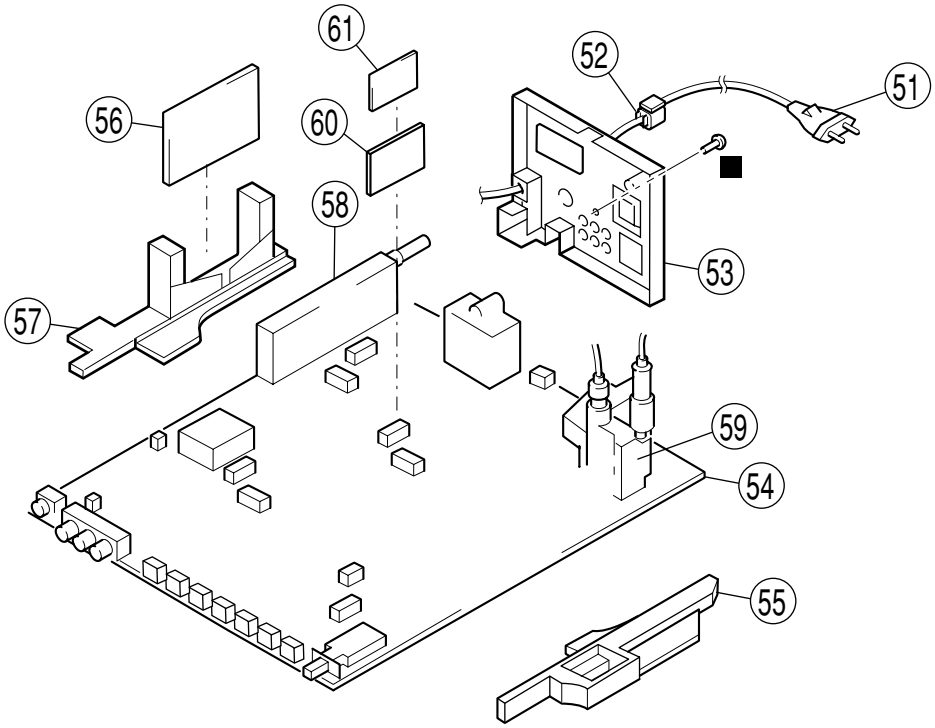



| REF. NO. | | PART NO. | DESCRIPTION | REMARK |
|---|---|---|---|---|
| 1 | | X-4038-507-1 | BEZNET ASSY | 2 - 5 |
| 2 | | 4-036-405-11 | SPRING COMPRESSION | |
| 3 | | 4-080-400-01 | BUTTON POWER | |
| 4 | | 4-047-464-01 | CATCHER PUSH | |
| 5 | * | 4-080-401-01 | GUIDE LIGHT | |
| 6 | | 4-083-910-61 | DOOR CONTROL | |
| 7 | ⚠ | 8-738-809-05 | PICTURE TUBE (A51LPT70X) | |
| 8 | | 1-452-032-00 | MAGNET DISC | |
| 9 | | 4-365-808-01 | SCREW (5) TAPPING | |
| 10 | | 3-704-372-11 | HOLDER HV CABLE | |
| 11 | | 4-046-600-11 | SPACER DY | |
| 12 | | 4-057-714-01 | PIECE TLH CONVERGENCE | |
| 13 | ⚠ | 8-451-505-11 | DEFLECTION YOKE (Y21RSA-S) | |
| 14 | | 4-064-883-03 | HOLDER DGC | |
| 15 | * | A-1332-141-A | C1 BOARD MOUNTED | |

| REF. NO. | | PART NO. | DESCRIPTION | REMARK |
|---|---|---|---|---|
| 16 | | 4-302-404-03 | SCREW (WASHER HEAD) (+P4X16) | |
| 17 | | 4-078-765-01 | SPRING EXTENSION | |
| 18 | ⚠ | 1-416-946-11 | COIL DEMAGNETIC | |
| 19 | | 1-529-125-11 | SPEAKER (13X7CM) | |
| 20 | | 1-452-728-81 | COIL NA ROTATION (RT-154) | |
| 21 | | X-4038-831-5 | REAR COVER ASSY (■ 8 SCREWS) | |
| 22 | | 4-046-981-03 | BRACKET SPEAKER | |
| 23 | | 4-051-736-42 | PIECE A(90) CONV, CORRECT | |
| 24 | | 4-069-652-02 | CUSHION (HS BAND) | |
| 25 | * | 4-069-797-01 | CUSHION SPEAKER(S) | |
| 26 | | 1-416-864-21 | COIL VM | |
| 27 | | 4-374-745-21 | CUSHION A | |

## 6-2. CHASSIS

■ : 7-685-663-71 SCREW +BVTP 4 × 16




| REF. NO. | | PART NO. | DESCRIPTION | REMARK |
|---|---|---|---|---|
| 51 | ⚠ | 1-823-551-11 | CORD AC POWER (WITH CONNECTOR) | |
| 52 | ⚠ | 4-022-115-00 | HOLDER AC CORD | |
| 53 | * | 4-067-167-02 | BRACKET TERMINAL | |
| 54 | * | A-1300-667-A | A BOARD COMPLETE | |
| 55 | | 4-067-876-11 | PWB (R) GUIDE | |
| 56 | * | A-1241-450-A | F BOARD MOUNTED | |
| 57 | | 4-067-875-11 | PWB (L) GUIDE | |
| 58 | | 8-598-449-10 | TUNER FSS BTF-LG433 | |
| 59 | ⚠ | 1-453-293-11 | TRANSFORMER ASSY FLY BACK | |
| | | | (NX-1748//M3A4) | |
| 60 | * | 4-068-953-03 | BRACKET V1 | |
| 61 | * | A-1300-668-A | V1 BOARD COMPLETE | |

A

# SECTION 7
# ELECTRICAL PARTS LIST

NOTE:

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board name.

- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- All resistors are in ohms
- F : nonflammable

CAPACITORS
- MF : µF, PF : µµF

COILS
- MMH : mH, UH : µH

| REF NO. | PART NO. | DESCRIPTION | | REMARK | |
|---|---|---|---|---|---|
| * | A-1300-667-A | A BOARD COMPLETE | | | |
| | | ********** | | | |
| * | 4-055-304-01 | HOLDER, LED | | | |
| * | 4-067-182-03 | HOLDER, FBT | | | |
| | 4-382-854-11 | SCREW (M3X10), P, SW (+) | | | |
| | 4-382-854-21 | SCREW (M3X14), P, SW (+) | | | |
| | 7-685-648-79 | SCREW +BVTP 3X12 TYPE2 IT-3 | | | |
| | | <CAPACITOR> | | | |
| C004 | 1-162-960-11 | CERAMIC CHIP | 220PF | 10.00% | 50V |
| C005 | 1-162-960-11 | CERAMIC CHIP | 220PF | 10.00% | 50V |
| C006 | 1-164-004-11 | CERAMIC CHIP | 0.1UF | 10.00% | 25V |
| C007 | 1-126-947-11 | ELECT | 47UF | 20.00% | 16V |
| C008 | 1-163-251-11 | CERAMIC CHIP | 100PF | 5.00% | 50V |
| C010 | 1-162-927-11 | CERAMIC CHIP | 100PF | 5.00% | 50V |
| C012 | 1-162-927-11 | CERAMIC CHIP | 100PF | 5.00% | 50V |
| C013 | 1-163-021-91 | CERAMIC CHIP | 0.01UF | 10.00% | 50V |
| C014 | 1-126-947-11 | ELECT | 47UF | 20.00% | 25V |
| C015 | 1-162-964-11 | CERAMIC CHIP | 0.001UF | 10.00% | 50V |
| C016 | 1-163-247-91 | CERAMIC CHIP | 68PF | 5.00% | 50V |
| C017 | 1-162-925-11 | CERAMIC CHIP | 68PF | 5.00% | 50V |
| C019 | 1-126-947-11 | ELECT | 47UF | 20.00% | 25V |
| C022 | 1-162-915-11 | CERAMIC CHIP | 10PF | 0.50PF | 50V |
| C023 | 1-162-915-11 | CERAMIC CHIP | 10PF | 0.50PF | 50V |
| C024 | 1-162-915-11 | CERAMIC CHIP | 10PF | 0.50PF | 50V |
| C026 | 1-164-004-11 | CERAMIC CHIP | 0.1UF | 10.00% | 25V |
| C027 | 1-164-004-11 | CERAMIC CHIP | 0.1UF | 10.00% | 25V |
| C028 | 1-163-037-11 | CERAMIC CHIP | 0.022UF | 10.00% | 50V |
| C030 | 1-126-965-91 | ELECT | 22UF | 20.00% | 50V |
| C031 | 1-164-004-11 | CERAMIC CHIP | 0.1UF | 10.00% | 25V |
| C032 | 1-107-823-11 | CERAMIC CHIP | 0.47UF | 10.00% | 16V |
| C041 | 1-162-927-11 | CERAMIC CHIP | 100PF | 5.00% | 50V |
| C042 | 1-162-927-11 | CERAMIC CHIP | 100PF | 5.00% | 50V |
| C043 | 1-162-927-11 | CERAMIC CHIP | 100PF | 5.00% | 50V |
| C044 | 1-162-927-11 | CERAMIC CHIP | 100PF | 5.00% | 50V |
| C047 | 1-162-927-11 | CERAMIC CHIP | 100PF | 5.00% | 50V |
| C048 | 1-162-927-11 | CERAMIC CHIP | 100PF | 5.00% | 50V |
| C050 | 1-162-927-11 | CERAMIC CHIP | 100PF | 5.00% | 50V |
| C051 | 1-162-927-11 | CERAMIC CHIP | 100PF | 5.00% | 50V |
| C053 | 1-162-927-11 | CERAMIC CHIP | 100PF | 5.00% | 50V |
| C054 | 1-163-251-11 | CERAMIC CHIP | 100PF | 5.00% | 50V |
| C055 | 1-162-927-11 | CERAMIC CHIP | 100PF | 5.00% | 50V |
| C103 | 1-164-004-11 | CERAMIC CHIP | 0.1UF | 10.00% | 25V |
| C104 | 1-104-665-11 | ELECT | 100UF | 20.00% | 10V |
| C107 | 1-162-962-11 | CERAMIC CHIP | 470PF | 10.00% | 50V |
| C108 | 1-126-947-11 | ELECT | 47UF | 20.00% | 16V |
| C109 | 1-162-962-11 | CERAMIC CHIP | 470PF | 10.00% | 50V |
| C110 | 1-162-962-11 | CERAMIC CHIP | 470PF | 10.00% | 50V |
| C111 | 1-162-962-11 | CERAMIC CHIP | 470PF | 10.00% | 50V |

| REF NO. | PART NO. | DESCRIPTION | | REMARK | |
|---|---|---|---|---|---|
| C112 | 1-126-947-11 | ELECT | 47UF | 20.00% | 16V |
| C113 | 1-126-947-11 | ELECT | 47UF | 20.00% | 25V |
| C114 | 1-126-967-11 | ELECT | 47UF | 20.00% | 50V |
| C118 | 1-110-501-11 | CERAMIC CHIP | 0.33UF | 10.00% | 16V |
| C202 | 1-163-023-00 | CERAMIC CHIP | 0.015UF | 10.00% | 50V |
| C203 | 1-163-023-00 | CERAMIC CHIP | 0.015UF | 10.00% | 50V |
| C204 | 1-130-489-00 | MYLAR | 0.033UF | 5.00% | 50V |
| C205 | 1-163-019-00 | CERAMIC CHIP | 0.0068UF | 10.00% | 50V |
| C206 | 1-163-019-00 | CERAMIC CHIP | 0.0068UF | 10.00% | 50V |
| C207 | 1-130-489-00 | MYLAR | 0.033UF | 5.00% | 50V |
| C208 | 1-126-964-11 | ELECT | 10UF | 20.00% | 50V |
| C209 | 1-126-964-11 | ELECT | 10UF | 20.00% | 50V |
| C210 | 1-126-933-11 | ELECT | 100UF | 20.00% | 16V |
| C211 | 1-126-941-11 | ELECT | 470UF | 20.00% | 25V |
| C212 | 1-126-933-11 | ELECT | 100UF | 20.00% | 16V |
| C213 | 1-126-933-11 | ELECT | 100UF | 20.00% | 16V |
| C214 | 1-126-942-61 | ELECT | 1000UF | 20.00% | 25V |
| C215 | 1-126-942-61 | ELECT | 1000UF | 20.00% | 25V |
| C216 | 1-163-021-91 | CERAMIC CHIP | 0.01UF | 10.00% | 50V |
| C217 | 1-126-964-11 | ELECT | 10UF | 20.00% | 50V |
| C218 | 1-136-167-00 | FILM | 0.15UF | 5.00% | 50V |
| C219 | 1-136-167-00 | FILM | 0.15UF | 5.00% | 50V |
| C220 | 1-126-942-61 | ELECT | 1000UF | 20.00% | 25V |
| C221 | 1-126-964-11 | ELECT | 10UF | 20.00% | 50V |
| C223 | 1-126-965-91 | ELECT | 22UF | 20.00% | 50V |
| C224 | 1-163-133-00 | CERAMIC CHIP | 470PF | 5.00% | 50V |
| C225 | 1-109-982-11 | CERAMIC CHIP | 1UF | 10.00% | 10V |
| C226 | 1-109-982-11 | CERAMIC CHIP | 1UF | 10.00% | 10V |
| C227 | 1-164-346-11 | CERAMIC CHIP | 1UF | | 16V |
| C228 | 1-216-077-91 | RES-CHIP | 15K | 5% | 1/10W |
| C229 | 1-216-077-91 | RES-CHIP | 15K | 5% | 1/10W |
| C230 | 1-164-346-11 | CERAMIC CHIP | 1UF | | 16V |
| C256 | 1-164-004-11 | CERAMIC CHIP | 0.1UF | 10.00% | 25V |
| C259 | 1-126-933-11 | ELECT | 100UF | 20.00% | 16V |
| C264 | 1-164-505-11 | CERAMIC CHIP | 2.2UF | | 16V |
| C265 | 1-164-505-11 | CERAMIC CHIP | 2.2UF | | 16V |
| C271 | 1-117-720-11 | CERAMIC CHIP | 4.7UF | | 10V |
| C272 | 1-126-961-11 | ELECT | 2.2UF | 20.00% | 50V |
| C273 | 1-117-720-11 | CERAMIC CHIP | 4.7UF | | 10V |
| C274 | 1-126-961-11 | ELECT | 2.2UF | 20.00% | 50V |
| C275 | 1-164-004-11 | CERAMIC CHIP | 0.1UF | 10.00% | 25V |
| C276 | 1-164-004-11 | CERAMIC CHIP | 0.1UF | 10.00% | 25V |
| C277 | 1-164-004-11 | CERAMIC CHIP | 0.1UF | 10.00% | 25V |
| C278 | 1-164-004-11 | CERAMIC CHIP | 0.1UF | 10.00% | 25V |
| C279 | 1-163-010-11 | CERAMIC CHIP | 0.0012UF | 10.00% | 50V |
| C280 | 1-164-004-11 | CERAMIC CHIP | 0.1UF | 10.00% | 25V |
| C281 | 1-163-018-00 | CERAMIC CHIP | 0.0056UF | 10.00% | 50V |
| C282 | 1-163-018-00 | CERAMIC CHIP | 0.0056UF | 10.00% | 50V |
| C283 | 1-126-965-91 | ELECT | 22UF | 20.00% | 50V |
| C301 | 1-126-935-11 | ELECT | 470UF | 20.00% | 16V |

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

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| REF NO. | PART NO. | DESCRIPTION | | REMARK | |
|---|---|---|---|---|---|
| C302 | 1-162-962-11 | CERAMIC CHIP | 470PF | 10.00% | 50V |
| C303 | 1-126-964-11 | ELECT | 10UF | 20.00% | 50V |
| C304 | 1-126-967-11 | ELECT | 47UF | 20.00% | 50V |
| C305 | 1-164-004-11 | CERAMIC CHIP | 0.1UF | 10.00% | 25V |
| C306 | 1-162-918-11 | CERAMIC CHIP | 18PF | 5.00% | 50V |
| C307 | 1-162-918-11 | CERAMIC CHIP | 18PF | 5.00% | 50V |
| C308 | 1-163-259-91 | CERAMIC CHIP | 220PF | 5.00% | 50V |
| C309 | 1-137-378-11 | MYLAR | 0.22UF | 5.00% | 50V |
| C310 | 1-126-963-11 | ELECT | 4.7UF | 20.00% | 50V |
| C311 | 1-126-964-11 | ELECT | 10UF | 20.00% | 50V |
| C312 | 1-164-346-11 | CERAMIC CHIP | 1UF | | 16V |
| C313 | 1-164-346-11 | CERAMIC CHIP | 1UF | | 16V |
| C315 | 1-164-004-11 | CERAMIC CHIP | 0.1UF | 10.00% | 25V |
| C316 | 1-126-947-11 | ELECT | 47UF | 20.00% | 25V |
| C317 | 1-164-004-11 | CERAMIC CHIP | 0.1UF | 10.00% | 25V |
| C318 | 1-162-974-11 | CERAMIC CHIP | 0.01UF | | 50V |
| C319 | 1-162-974-11 | CERAMIC CHIP | 0.01UF | | 50V |
| C320 | 1-162-974-11 | CERAMIC CHIP | 0.01UF | | 50V |
| C322 | 1-162-962-11 | CERAMIC CHIP | 470PF | 10.00% | 50V |
| C324 | 1-162-968-11 | CERAMIC CHIP | 0.0047UF | 10.00% | 50V |
| C325 | 1-126-960-11 | ELECT | 1UF | 20.00% | 50V |
| C327 | 1-126-965-91 | ELECT | 22UF | 20.00% | 50V |
| C328 | 1-164-004-11 | CERAMIC CHIP | 0.1UF | 10.00% | 25V |
| C329 | 1-126-963-11 | ELECT | 4.7UF | 20.00% | 50V |
| C330 | 1-164-004-11 | CERAMIC CHIP | 0.1UF | 10.00% | 25V |
| C332 | 1-126-963-11 | ELECT | 4.7UF | 20.00% | 50V |
| C335 | 1-164-004-11 | CERAMIC CHIP | 0.1UF | 10.00% | 25V |
| C336 | 1-164-004-11 | CERAMIC CHIP | 0.1UF | 10.00% | 25V |
| C337 | 1-126-961-11 | ELECT | 2.2UF | 20.00% | 50V |
| C338 | 1-162-968-11 | CERAMIC CHIP | 0.0047UF | 10.00% | 50V |
| C341 | 1-115-340-11 | CERAMIC CHIP | 0.22UF | 10.00% | 25V |
| C342 | 1-163-259-91 | CERAMIC CHIP | 220PF | 5.00% | 50V |
| C347 | 1-126-933-11 | ELECT | 100UF | 20.00% | 16V |
| C348 | 1-164-004-11 | CERAMIC CHIP | 0.1UF | 10.00% | 25V |
| C349 | 1-164-004-11 | CERAMIC CHIP | 0.1UF | 10.00% | 25V |
| C350 | 1-216-295-91 | SHORT CHIP | 0 | | |
| C351 | 1-126-964-11 | ELECT | 10UF | 20.00% | 50V |
| C352 | 1-164-004-11 | CERAMIC CHIP | 0.1UF | 10.00% | 25V |
| C353 | 1-126-960-11 | ELECT | 1UF | 20.00% | 50V |
| C356 | 1-126-962-11 | ELECT | 3.3UF | 20.00% | 50V |
| C357 | 1-164-004-11 | CERAMIC CHIP | 0.1UF | 10.00% | 25V |
| C401 | 1-164-346-11 | CERAMIC CHIP | 1UF | | 16V |
| C402 | 1-164-346-11 | CERAMIC CHIP | 1UF | | 16V |
| C403 | 1-162-962-11 | CERAMIC CHIP | 470PF | 10.00% | 50V |
| C404 | 1-162-962-11 | CERAMIC CHIP | 470PF | 10.00% | 50V |
| C405 | 1-126-935-11 | ELECT | 470UF | 20.00% | 16V |
| C406 | 1-164-346-11 | CERAMIC CHIP | 1UF | | 16V |
| C407 | 1-164-346-11 | CERAMIC CHIP | 1UF | | 16V |
| C408 | 1-163-133-00 | CERAMIC CHIP | 470PF | 5.00% | 50V |
| C409 | 1-126-963-11 | ELECT | 4.7UF | 20.00% | 50V |
| C415 | 1-163-133-00 | CERAMIC CHIP | 470PF | 5.00% | 50V |
| C502 | 1-163-145-00 | CERAMIC CHIP | 0.0015UF | 5.00% | 50V |
| C506 | 1-107-638-11 | ELECT | 33UF | 20.00% | 160V |
| C507 | 1-161-830-00 | CERAMIC | 0.0047UF | | 500V |
| C510 | 1-102-112-00 | CERAMIC | 330PF | 10.00% | 50V |
| C512 | 1-163-989-11 | CERAMIC CHIP | 0.033UF | 10.00% | 25V |
| C513 | 1-162-974-11 | CERAMIC CHIP | 0.01UF | | 50V |
| C514 | 1-106-383-00 | MYLAR | 0.047UF | 10.00% | 200V |
| C517 | 1-162-967-11 | CERAMIC CHIP | 0.0033UF | 10.00% | 50V |
| C518 | 1-104-665-11 | ELECT | 100UF | 20.00% | 10V |
| C519 | 1-102-212-00 | CERAMIC | 820PF | 10.00% | 500V |
| C521 | 1-126-934-11 | ELECT | 220UF | 20.00% | 16V |

| REF NO. | PART NO. | DESCRIPTION | | REMARK | |
|---|---|---|---|---|---|
| C522 | 1-126-933-11 | ELECT | 100UF | 20.00% | 16V |
| C523 | 1-102-002-00 | CERAMIC | 680PF | 10.00% | 500V |
| C524 | 1-126-967-11 | ELECT | 47UF | 20.00% | 50V |
| C526 | 1-130-495-00 | MYLAR | 0.1UF | 5.00% | 50V |
| C527 | 1-136-153-00 | FILM | 0.01UF | 5.00% | 50V |
| C528 | 1-162-134-11 | CERAMIC | 470PF | 10.00% | 2KV |
| C530 | 1-137-372-11 | MYLAR | 0.022UF | 5.00% | 50V |
| C531 | 1-126-967-11 | ELECT | 47UF | 20.00% | 50V |
| C534 | 1-164-004-11 | CERAMIC CHIP | 0.1UF | 10.00% | 25V |
| C537 | 1-126-969-11 | ELECT | 220UF | 20.00% | 50V |
| C538 | 1-117-657-21 | FILM | 8500PF | 3.00% | 1.2KV |
| C539 | 1-129-746-91 | FILM | 0.039UF | 5.00% | 400V |
| C540 | 1-137-194-81 | FILM | 0.47UF | 5.00% | 50V |
| C549 | 1-162-968-11 | CERAMIC CHIP | 0.0047UF | 10.00% | 50V |
| C550 | 1-106-220-00 | MYLAR | 0.1UF | 10.00% | 100V |
| C551 | 1-126-960-11 | ELECT | 1UF | 20.00% | 50V |
| C552 | 1-162-116-00 | CERAMIC | 680PF | 10.00% | 2KV |
| C553 | 1-162-116-00 | CERAMIC | 680PF | 10.00% | 2KV |
| C554 | 1-137-417-11 | MYLAR | 0.0047UF | 10.00% | 200V |
| C556 | 1-104-666-11 | ELECT | 220UF | 20.00% | 25V |
| C557 | 1-104-666-11 | ELECT | 220UF | 20.00% | 25V |
| C558 | 1-123-024-21 | ELECT | 33UF | | 160V |
| C560 | 1-102-228-00 | CERAMIC | 470PF | 10.00% | 500V |
| C561 | 1-129-708-91 | FILM | 0.0033UF | 5.00% | 630V |
| C562 | 1-102-228-00 | CERAMIC | 470PF | 10.00% | 500V |
| C564 | 1-163-038-91 | CERAMIC CHIP | 0.1UF | | 25V |
| C565 | 1-107-655-11 | ELECT | 47UF | 20.00% | 250V |
| C566 | 1-102-244-00 | CERAMIC | 220PF | 10.00% | 500V |
| C567 | 1-115-521-11 | FILM | 0.82UF | 5.00% | 250V |
| C568 | 1-102-228-00 | CERAMIC | 470PF | 10.00% | 500V |
| C570 | 1-115-520-11 | FILM | 0.68UF | 5.00% | 250V |
| C573 | 1-106-375-12 | MYLAR | 0.022UF | 99% | 200V |
| C574 | 1-107-636-11 | ELECT | 10UF | 20.00% | 160V |
| C576 | 1-130-495-00 | MYLAR | 0.1UF | 5.00% | 50V |
| C577 | 1-106-395-00 | MYLAR | 0.15UF | 10.00% | 200V |
| C582 | 1-164-004-11 | CERAMIC CHIP | 0.1UF | 10.00% | 25V |
| C586 | 1-216-295-91 | SHORT CHIP | 0 | | |
| C600 ⚠ | 1-104-705-51 | MYLAR | 0.1UF | 20.00% | 250V |
| C602 ⚠ | 1-104-705-51 | MYLAR | 0.1UF | 20.00% | 250V |
| C604 | 1-162-964-11 | CERAMIC CHIP | 0.001UF | 10.00% | 50V |
| C605 ⚠ | 1-127-942-51 | CERAMIC | 330PF | 10% | 250V |
| C606 ⚠ | 1-127-942-51 | CERAMIC | 330PF | 10% | 250V |
| C607 | 1-161-830-00 | CERAMIC | 0.0047UF | 99% | 500V |
| C608 | 1-161-830-00 | CERAMIC | 0.0047UF | 99% | 500V |
| C609 | 1-126-968-11 | ELECT | 100UF | 20.00% | 50V |
| C610 | 1-126-964-11 | ELECT | 10UF | 20.00% | 50V |
| C611 | 1-161-830-00 | CERAMIC | 0.0047UF | 99% | 500V |
| C612 | 1-161-830-00 | CERAMIC | 0.0047UF | 99% | 500V |
| C613 | 1-117-752-11 | ELECT(BLOCK) | 330UF | 20.00% | 450V |
| C614 | 1-126-964-11 | ELECT | 10UF | 20.00% | 50V |
| C616 | 1-130-202-00 | FILM | 0.022UF | 5.00% | 400V |
| C617 | 1-107-792-11 | CERAMIC | 100PF | 5.00% | 1KV |
| C618 | 1-125-893-11 | FILM | 680PF | 3.00% | 1.5KV |
| C619 ⚠ | 1-119-892-51 | CERAMIC | 470PF | 10.00% | 250V |
| C620 | 1-163-133-00 | CERAMIC CHIP | 470PF | 5.00% | 50V |
| C621 | 1-102-114-00 | CERAMIC | 470PF | 10.00% | 50V |
| C622 | 1-102-074-00 | CERAMIC | 0.001UF | 10.00% | 50V |
| C623 | 1-104-665-11 | ELECT | 100UF | 20.00% | 25V |
| C624 | 1-104-331-11 | CERAMIC | 0.0022UF | 10.00% | 1KV |
| C627 | 1-102-002-00 | CERAMIC | 680PF | 10.00% | 500V |

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| REF NO. | PART NO. | DESCRIPTION | | REMARK | |
|---|---|---|---|---|---|
| C628 | 1-126-942-61 | ELECT | 1000UF | 20.00% | 25V |
| C629 | 1-126-964-11 | ELECT | 10UF | 20.00% | 50V |
| C630 | 1-123-024-21 | ELECT | 33UF | | 160V |
| C633 | 1-104-999-11 | MYLAR | 0.1UF | 10.00% | 200V |
| C634 | 1-126-933-11 | ELECT | 100UF | 20.00% | 16V |
| C635 | 1-104-665-11 | ELECT | 100UF | 20.00% | 10V |
| C636 | 1-104-760-11 | CERAMIC CHIP | 0.047UF | 10.00% | 50V |
| C639 | 1-164-004-11 | CERAMIC CHIP | 0.1UF | 10.00% | 25V |
| C640 | 1-164-004-11 | CERAMIC CHIP | 0.1UF | 10.00% | 25V |
| C641 | 1-102-002-00 | CERAMIC | 680PF | 10.00% | 500V |
| C642 | 1-107-890-11 | ELECT | 2200UF | 20.00% | 25V |
| C643 | 1-104-665-11 | ELECT | 100UF | 20.00% | 10V |
| C644 | 1-104-331-11 | CERAMIC | 0.0022UF | 10.00% | 1KV |
| C645 | 1-137-605-11 | MYLAR | 0.01UF | 10.00% | 250V |
| C646 | 1-107-679-91 | ELECT | 10UF | 20.00% | 450V |
| C647 | 1-163-275-11 | CERAMIC CHIP | 0.001UF | 5.00% | 50V |
| C649 | 1-126-940-11 | ELECT | 330UF | 20.00% | 25V |
| C650 | 1-163-275-11 | CERAMIC CHIP | 0.001UF | 5.00% | 50V |
| C651 | 1-163-133-00 | CERAMIC CHIP | 470PF | 5.00% | 50V |
| C652 | 1-126-965-91 | ELECT | 22UF | 20.00% | 50V |
| C653 | 1-126-947-11 | ELECT | 47UF | 20.00% | 25V |
| C657 | 1-101-821-00 | CERAMIC | 0.0022UF | | 500V |
| C658 | 1-164-004-11 | CERAMIC CHIP | 0.1UF | 10.00% | 25V |
| C901 | 1-136-153-00 | FILM | 0.01UF | 5.00% | 50V |
| C902 | 1-136-153-00 | FILM | 0.01UF | 5.00% | 50V |
| C905 | 1-126-963-11 | ELECT | 4.7UF | 20.00% | 50V |
| C906 | 1-164-346-11 | CERAMIC CHIP | 1UF | | 16V |
| C907 | 1-163-133-00 | CERAMIC CHIP | 470PF | 5.00% | 50V |
| C908 | 1-163-133-00 | CERAMIC CHIP | 470PF | 5.00% | 50V |
| C909 | 1-164-346-11 | CERAMIC CHIP | 1UF | | 16V |
| C910 | 1-126-967-11 | ELECT | 47UF | 20.00% | 50V |
| C911 | 1-126-967-11 | ELECT | 47UF | 20.00% | 50V |
| C912 | 1-164-004-11 | CERAMIC CHIP | 0.1UF | 10.00% | 25V |
| C913 | 1-104-665-11 | ELECT | 100UF | 20.00% | 10V |
| C914 | 1-163-133-00 | CERAMIC CHIP | 470PF | 5.00% | 50V |

<CONNECTOR>

| | | | |
|---|---|---|---|
| CN104 | | 1-695-915-11 | TAB (CONTACT) |
| CN202 | * | 1-785-608-11 | PIN, CONNECTOR 4P |
| CN203 | * | 1-564-506-11 | PLUG, CONNECTOR 3P |
| CN204 | * | 1-564-506-11 | PLUG, CONNECTOR 3P |
| CN301 | * | 1-774-813-11 | CONNECTOR, BOARD TO BOARD 7P |
| CN305 | * | 1-564-509-11 | PLUG, CONNECTOR 6P |
| CN306 | * | 1-564-510-11 | PLUG, CONNECTOR 7P |
| CN307 | * | 1-774-813-11 | CONNECTOR, BOARD TO BOARD 7P |
| CN505 | | 1-564-507-11 | PLUG, CONNECTOR 4P |
| CN507 | * | 1-564-507-11 | PLUG, CONNECTOR 4P |
| CN601 | * | 1-580-843-11 | PIN, CONNECTOR (POWER) |
| CN602 | * | 1-508-786-00 | PIN, CONNECTOR (5MM PITCH) 2P |
| CN604 | * | 1-573-963-11 | PIN, CONNECTOR (PC BOARD) 3P |
| CN609 | * | 1-508-784-21 | PIN, CONNECTOR (5MM PITCH) 1P |
| CN901 | * | 1-564-507-11 | PLUG, CONNECTOR 4P |

<DIODE>

| | | |
|---|---|---|
| D001 | 8-719-081-97 | MMDL914T1 |
| D005 | 8-719-081-97 | MMDL914T1 |
| D006 | 8-719-081-97 | MMDL914T1 |
| D010 | 8-719-158-35 | RD9.1S-B |
| D011 | 8-719-158-35 | RD9.1S-B |

| REF NO. | PART NO. | DESCRIPTION | | REMARK | |
|---|---|---|---|---|---|
| D203 | 8-719-820-41 | 1SS302 | | | |
| D300 | 1-216-295-91 | SHORT CHIP | 0 | | |
| D301 | 8-719-081-97 | MMDL914T1 | | | |
| D306 | 8-719-081-97 | MMDL914T1 | | | |
| D307 | 8-719-081-97 | MMDL914T1 | | | |
| D308 | 8-719-081-97 | MMDL914T1 | | | |
| D309 | 8-719-159-10 | RD5.1SB-T2 | | | |
| D311 | 8-719-081-97 | MMDL914T1 | | | |
| D312 | 8-719-081-97 | MMDL914T1 | | | |
| D313 | 8-719-081-97 | MMDL914T1 | | | |
| D314 | 8-719-081-97 | MMDL914T1 | | | |
| D315 | 8-719-081-97 | MMDL914T1 | | | |
| D316 | 8-719-037-02 | RD6.8SB-T1 | | | |
| D320 | 8-719-158-35 | RD9.1S-B | | | |
| D321 | 8-719-158-35 | RD9.1S-B | | | |
| D401 | 8-719-158-35 | RD9.1S-B | | | |
| D402 | 8-719-158-35 | RD9.1S-B | | | |
| D403 | 8-719-158-35 | RD9.1S-B | | | |
| D404 | 8-719-158-35 | RD9.1S-B | | | |
| D405 | 8-719-158-35 | RD9.1S-B | | | |
| D406 | 8-719-158-35 | RD9.1S-B | | | |
| D504 | 8-719-302-06 | EU2A | | | |
| D504 | 8-719-302-43 | EL1Z | | | |
| D505 | 8-719-081-97 | MMDL914T1 | | | |
| D506 | 8-719-911-19 | 1SS119-25 | | | |
| D507 | 8-719-081-97 | MMDL914T1 | | | |
| D508 | 8-719-081-97 | MMDL914T1 | | | |
| D509 | 1-216-073-91 | RES-CHIP | 10K | 5% | 1/10W |
| D510 | 8-719-081-97 | MMDL914T1 | | | |
| D511 | 8-719-081-97 | MMDL914T1 | | | |
| D512 | 8-719-081-97 | MMDL914T1 | | | |
| D513 | 8-719-908-03 | GP08D | | | |
| D517 | 8-719-081-00 | DIODE BY228/A52A/ | | | |
| D518 | 8-719-900-26 | ERD29-08J | | | |
| D521 | 8-719-302-43 | EL1Z | | | |
| D522 | 8-719-302-43 | EL1Z | | | |
| D523 | 8-719-302-43 | EL1Z | | | |
| D527 | 8-719-908-03 | GP08D | | | |
| D528 | 8-719-908-03 | GP08D | | | |
| D531 | 8-719-081-97 | MMDL914T1 | | | |
| D532 | 8-719-081-97 | MMDL914T1 | | | |
| D534 | 1-216-295-91 | SHORT CHIP | 0 | | |
| D602 | 8-719-911-19 | 1SS119-25 | | | |
| D603 | 8-719-150-92 | RD33EB3T | | | |
| D604 | 8-719-028-72 | RGP02-17EL-6433 | | | |
| D605 | 8-719-510-22 | D3SB60 | | | |
| D606 | 8-719-108-18 | 5P-6M | | | |
| D607 | 8-719-081-97 | MMDL914T1 | | | |
| D608 | 8-719-110-53 | RD20ES-B2 | | | |
| D609 | 8-719-311-31 | RU-1P | | | |
| D610 | 8-719-210-21 | 11EQS04 | | | |
| D611 | 8-719-046-74 | AU-01Z-V1 | | | |
| D613 | 8-719-046-74 | AU-01Z-V1 | | | |
| D614 | 8-719-046-74 | AU-01Z-V1 | | | |
| D615 | 8-719-312-10 | RU4AM-T3 | | | |
| D618 | 8-719-067-18 | RN4Z | | | |
| D620 | 8-719-110-72 | RD30ESB2 | | | |
| D623 | 8-719-082-03 | DIODE MM3Z15VT1 | | | |
| D624 | 8-719-081-97 | MMDL914T1 | | | |
| D625 | 8-719-158-39 | RD10S-B | | | |
| D627 | 8-719-073-84 | 31DQ06-FC5 | | | |
| D628 | 8-719-911-19 | 1SS119-25 | | | |

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| REF NO. | PART NO. | DESCRIPTION | REMARK |
|---|---|---|---|
| D631 | 8-719-068-00 | ERC04-06SE | |
| D632 | 8-719-068-00 | ERC04-06SE | |
| D633 | 8-719-948-45 | ERA22-08 | |
| D634 | 8-719-081-97 | MMDL914T1 | |
| D635 | 8-719-081-97 | MMDL914T1 | |
| D636 | 8-719-510-02 | D1NS4 | |
| D637 | 8-719-109-96 | RD6.8ES-B1 | |
| D638 | 8-719-200-82 | 11ES2 | |
| D901 | 8-719-158-35 | RD9.1S-B | |
| D902 | 8-719-158-35 | RD9.1S-B | |
| D903 | 8-719-158-35 | RD9.1S-B | |
| D904 | 8-719-158-35 | RD9.1S-B | |
| D905 | 8-719-158-35 | RD9.1S-B | |
| D906 | 8-719-083-18 | DIODE SPB-25MVWF | |
| | | <CONNECTOR> | |
| DY1 | * 1-580-798-11 | CONNECTOR PIN (DY) 6P | |
| | | <FERRITE BEAD> | |
| FB300 | 1-412-911-31 | FERRITE 0UH | |
| FB501 | 1-410-397-21 | FERRITE 1.1UH | |
| FB502 | 1-410-397-21 | FERRITE 1.1UH | |
| FB600 | 1-410-397-21 | FERRITE 1.1UH | |
| FB601 | 1-410-397-21 | FERRITE 1.1UH | |
| FB602 | 1-410-397-21 | FERRITE 1.1UH | |
| FB603 | 1-410-397-21 | FERRITE 1.1UH | |
| FB604 | 1-412-911-31 | FERRITE 0UH | |
| FB607 | 1-410-397-21 | FERRITE 1.1UH | |
| FB608 | 1-412-911-31 | FERRITE 0UH | |
| FB611 | 1-410-397-21 | FERRITE 1.1UH | |
| FB613 | 1-410-397-21 | FERRITE 1.1UH | |
| FB615 | 1-410-397-21 | FERRITE 1.1UH | |
| | | <IC> | |
| IC001 | 8-752-917-83 | IC CXP86449-631S | |
| IC002 | 8-759-371-21 | MM1319AFBE | |
| IC003 | 8-759-672-78 | M24C08-BN6(A) | |
| IC201 | 8-759-336-30 | TA8223K | |
| IC203 | 8-759-827-61 | IC TDA7442D013TR | |
| IC301 | 8-752-095-72 | CXA2159S | |
| IC302 | 8-759-672-27 | TDA9183T | |
| IC502 | 8-759-700-07 | NJM2903M | |
| IC503 | 8-759-835-98 | IC AN5522 | |
| IC601 | 8-749-013-75 | STR-F6654 | |
| IC602 | 8-749-920-61 | SE-135N | |
| IC603 | 8-759-701-59 | NJM78M09FA | |
| IC604 | 8-759-646-52 | KIA7805API | |
| IC901 | 8-742-134-01 | SBX1981-51RP | |
| | | <JACK> | |
| J401 | 1-779-850-11 | JACK BLOCK, PIN 6P | |
| J901 | 1-770-786-11 | JACK | |
| J902 | 1-770-329-13 | JACK, PIN 3P | |
| | | <CHIP CONDUCTOR> | |
| JR001 | 1-216-295-91 | SHORT CHIP 0 | |
| JR002 | 1-216-295-91 | SHORT CHIP 0 | |

| REF NO. | PART NO. | DESCRIPTION | REMARK |
|---|---|---|---|
| JR003 | 1-216-295-91 | SHORT CHIP 0 | |
| JR004 | 1-216-295-91 | SHORT CHIP 0 | |
| JR006 | 1-216-295-91 | SHORT CHIP 0 | |
| JR007 | 1-216-295-91 | SHORT CHIP 0 | |
| JR008 | 1-216-295-91 | SHORT CHIP 0 | |
| JR009 | 1-216-295-91 | SHORT CHIP 0 | |
| JR010 | 1-216-295-91 | SHORT CHIP 0 | |
| JR011 | 1-216-295-91 | SHORT CHIP 0 | |
| JR012 | 1-216-295-91 | SHORT CHIP 0 | |
| JR014 | 1-216-295-91 | SHORT CHIP 0 | |
| JR015 | 1-216-295-91 | SHORT CHIP 0 | |
| JR016 | 1-216-295-91 | SHORT CHIP 0 | |
| JR019 | 1-216-295-91 | SHORT CHIP 0 | |
| JR020 | 1-216-295-91 | SHORT CHIP 0 | |
| JR022 | 1-216-295-91 | SHORT CHIP 0 | |
| JR023 | 1-216-295-91 | SHORT CHIP 0 | |
| JR024 | 1-216-295-91 | SHORT CHIP 0 | |
| JR025 | 1-216-295-91 | SHORT CHIP 0 | |
| JR028 | 1-216-295-91 | SHORT CHIP 0 | |
| JR102 | 1-216-295-91 | SHORT CHIP 0 | |
| JR109 | 1-216-295-91 | SHORT CHIP 0 | |
| JR112 | 1-216-295-91 | SHORT CHIP 0 | |
| JR202 | 1-216-295-91 | SHORT CHIP 0 | |
| JR204 | 1-216-295-91 | SHORT CHIP 0 | |
| JR213 | 1-216-295-91 | SHORT CHIP 0 | |
| JR214 | 1-216-295-91 | SHORT CHIP 0 | |
| JR300 | 1-216-295-91 | SHORT CHIP 0 | |
| JR304 | 1-216-295-91 | SHORT CHIP 0 | |
| JR308 | 1-216-295-91 | SHORT CHIP 0 | |
| JR309 | 1-216-295-91 | SHORT CHIP 0 | |
| JR310 | 1-216-295-91 | SHORT CHIP 0 | |
| JR311 | 1-216-295-91 | SHORT CHIP 0 | |
| JR312 | 1-216-295-91 | SHORT CHIP 0 | |
| JR400 | 1-216-295-91 | SHORT CHIP 0 | |
| JR401 | 1-216-295-91 | SHORT CHIP 0 | |
| JR403 | 1-216-295-91 | SHORT CHIP 0 | |
| JR404 | 1-216-295-91 | SHORT CHIP 0 | |
| JR405 | 1-216-295-91 | SHORT CHIP 0 | |
| JR500 | 1-216-295-91 | SHORT CHIP 0 | |
| JR501 | 1-216-295-91 | SHORT CHIP 0 | |
| JR503 | 1-216-295-91 | SHORT CHIP 0 | |
| JR505 | 1-216-295-91 | SHORT CHIP 0 | |
| JR600 | 1-216-295-91 | SHORT CHIP 0 | |
| | | <COIL> | |
| L002 | 1-414-856-11 | INDUCTOR 10UH | |
| L003 | 1-414-180-11 | INDUCTOR 3.3UH | |
| L005 | 1-414-233-22 | FERRITE 0UH | |
| L101 | 1-414-856-11 | INDUCTOR 10UH | |
| L102 | 1-414-856-11 | INDUCTOR 10UH | |
| L103 | 1-414-856-11 | INDUCTOR 10UH | |
| L104 | 1-414-856-11 | INDUCTOR 10UH | |
| L105 | 1-414-856-11 | INDUCTOR 10UH | |
| L204 | 1-414-856-11 | INDUCTOR 10UH | |
| L301 | 1-414-189-31 | INDUCTOR 100UH | |
| L302 | 1-414-185-41 | INDUCTOR 22UH | |
| L303 | 1-414-189-31 | INDUCTOR 100UH | |
| L304 | 1-414-189-31 | INDUCTOR 100UH | |
| L501 | 1-412-525-31 | INDUCTOR 10UH | |
| L502 | 1-422-613-11 | COIL, AIR CORE | |

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

**A**

| REF NO. | PART NO. | DESCRIPTION | REMARK |
|---|---|---|---|
| L503 | 1-412-525-31 | INDUCTOR 10UH | |
| L504 | 1-412-525-31 | INDUCTOR 10UH | |
| L505 | 1-412-525-31 | INDUCTOR 10UH | |
| L506 | 1-412-525-31 | INDUCTOR 10UH | |
| L507 | 1-459-111-00 | INDUCTOR 10MH | |
| L509 | 1-459-390-00 | INDUCTOR 390UH | |
| L510 | 1-416-972-11 | COIL, HORIZONTAL LINEARITY | |
| L513 | 1-412-551-31 | INDUCTOR 1.5MH | |
| L515 | 1-459-104-00 | COIL, WITH CORE | |
| L518 | 1-414-187-11 | INDUCTOR 47UH | |
| L601 | 1-412-527-11 | INDUCTOR 15UH | |
| L901 | 1-414-856-11 | INDUCTOR 10UH | |
| L902 | 1-414-856-11 | INDUCTOR 10UH | |
| L905 | 1-414-856-11 | INDUCTOR 10UH | |
| | | <PHOTO COUPLER> | |
| PH600 | ⚠ 8-749-924-35 | ON3171-R | |
| | | <IC LINK> | |
| PS200 | 1-532-675-21 | LINK, IC 1.5A/150V | |
| | | <TRANSISTOR> | |
| Q002 | 8-729-010-25 | MSD601-RT1 | |
| Q101 | 8-729-010-25 | MSD601-RT1 | |
| Q201 | 8-729-424-67 | UN2216 | |
| Q202 | 8-729-424-67 | UN2216 | |
| Q205 | 8-729-421-19 | UN2213 | |
| Q206 | 8-729-421-19 | UN2213 | |
| Q207 | 8-729-421-19 | UN2213 | |
| Q301 | 8-729-216-22 | 2SA1162-G | |
| Q302 | 8-729-010-25 | MSD601-RT1 | |
| Q303 | 8-729-216-22 | 2SA1162-G | |
| Q305 | 8-729-216-22 | 2SA1162-G | |
| Q306 | 8-729-010-25 | MSD601-RT1 | |
| Q307 | 8-729-010-25 | MSD601-RT1 | |
| Q308 | 8-729-216-22 | 2SA1162-G | |
| Q312 | 8-729-216-22 | 2SA1162-G | |
| Q313 | 8-729-010-25 | MSD601-RT1 | |
| Q314 | 8-729-216-22 | 2SA1162-G | |
| Q315 | 8-729-421-19 | UN2213 | |
| Q316 | 8-729-216-22 | 2SA1162-G | |
| Q317 | 8-729-216-22 | 2SA1162-G | |
| Q401 | 8-729-424-67 | UN2216 | |
| Q402 | 8-729-424-67 | UN2216 | |
| Q403 | 8-729-216-22 | 2SA1162-G | |
| Q404 | 8-729-216-22 | 2SA1162-G | |
| Q503 | 8-729-010-25 | MSD601-RT1 | |
| Q505 | 8-729-931-45 | IRF614 | |
| Q506 | 8-729-140-96 | 2SD774-34 | |
| Q507 | 8-729-216-22 | 2SA1162-G | |
| Q509 | 8-729-010-25 | MSD601-RT1 | |
| Q511 | 8-729-048-07 | 2SD2578-CA | |
| Q601 | 8-729-023-22 | 2SD2114K | |
| Q602 | 8-729-010-25 | MSD601-RT1 | |
| Q603 | 8-729-027-23 | DTA114EKA-T146 | |
| Q604 | 8-729-200-17 | 2SA1091-O | |
| Q605 | 8-729-044-30 | 2SK2845-LB102 | |
| Q606 | 8-729-010-25 | MSD601-RT1 | |
| Q607 | 8-729-823-22 | 2SC3576 | |
| Q608 | 8-729-010-25 | MSD601-RT1 | |
| Q901 | 8-729-421-19 | UN2213 | |
| Q902 | 8-729-421-19 | UN2213 | |
| | | <RESISTOR> | |
| R001 | 1-414-233-22 | FERRITE 0UH | |
| R002 | 1-216-025-11 | RES-CHIP 100 5% 1/10W | |
| R003 | 1-216-073-91 | RES-CHIP 10K 5% 1/10W | |
| R004 | 1-216-025-11 | RES-CHIP 100 5% 1/10W | |
| R005 | 1-216-025-11 | RES-CHIP 100 5% 1/10W | |
| R006 | 8-719-069-60 | UDZSTE-179.1B | |
| R006 | 8-719-158-35 | RD9.1S-B | |
| R007 | 1-216-295-91 | SHORT CHIP 0 | |
| R008 | 1-216-065-91 | RES-CHIP 4.7K 5% 1/10W | |
| R010 | 1-216-065-91 | RES-CHIP 4.7K 5% 1/10W | |
| R011 | 1-216-065-91 | RES-CHIP 4.7K 5% 1/10W | |
| R012 | 1-216-065-91 | RES-CHIP 4.7K 5% 1/10W | |
| R013 | 1-216-065-91 | RES-CHIP 4.7K 5% 1/10W | |
| R014 | 1-216-025-11 | RES-CHIP 100 5% 1/10W | |
| R015 | 1-216-025-11 | RES-CHIP 100 5% 1/10W | |
| R017 | 1-216-049-11 | RES-CHIP 1K 5% 1/10W | |
| R018 | 1-216-033-00 | RES-CHIP 220 5% 1/10W | |
| R019 | 1-216-073-91 | RES-CHIP 10K 5% 1/10W | |
| R020 | 1-216-045-00 | RES-CHIP 680 5% 1/10W | |
| R021 | 1-216-073-91 | RES-CHIP 10K 5% 1/10W | |
| R022 | 1-216-295-91 | SHORT CHIP 0 | |
| R024 | 1-216-057-00 | RES-CHIP 2.2K 5% 1/10W | |
| R025 | 1-216-057-00 | RES-CHIP 2.2K 5% 1/10W | |
| R026 | 1-216-057-00 | RES-CHIP 2.2K 5% 1/10W | |
| R027 | 1-216-073-91 | RES-CHIP 10K 5% 1/10W | |
| R029 | 1-216-049-11 | RES-CHIP 1K 5% 1/10W | |
| R031 | 1-216-049-11 | RES-CHIP 1K 5% 1/10W | |
| R035 | 1-216-025-11 | RES-CHIP 100 5% 1/10W | |
| R036 | 1-216-025-11 | RES-CHIP 100 5% 1/10W | |
| R037 | 1-216-025-11 | RES-CHIP 100 5% 1/10W | |
| R040 | 1-216-025-11 | RES-CHIP 100 5% 1/10W | |
| R041 | 1-216-025-11 | RES-CHIP 100 5% 1/10W | |
| R042 | 1-216-295-91 | SHORT CHIP 0 | |
| R043 | 1-216-049-11 | RES-CHIP 1K 5% 1/10W | |
| R044 | 1-216-025-11 | RES-CHIP 100 5% 1/10W | |
| R045 | 1-216-025-11 | RES-CHIP 100 5% 1/10W | |
| R046 | 1-216-049-11 | RES-CHIP 1K 5% 1/10W | |
| R047 | 1-414-233-22 | FERRITE 0UH | |
| R048 | 1-216-073-91 | RES-CHIP 10K 5% 1/10W | |
| R050 | 1-216-073-91 | RES-CHIP 10K 5% 1/10W | |
| R053 | 1-216-049-11 | RES-CHIP 1K 5% 1/10W | |
| R058 | 1-216-295-91 | SHORT CHIP 0 | |
| R059 | 1-216-295-91 | SHORT CHIP 0 | |
| R060 | 1-216-295-91 | SHORT CHIP 0 | |
| R061 | 1-216-033-00 | RES-CHIP 220 5% 1/10W | |
| R062 | 1-216-041-00 | RES-CHIP 470 5% 1/10W | |
| R063 | 1-216-037-00 | RES-CHIP 330 5% 1/10W | |
| R064 | 1-216-037-00 | RES-CHIP 330 5% 1/10W | |
| R065 | 1-216-037-00 | RES-CHIP 330 5% 1/10W | |
| R066 | 1-216-049-11 | RES-CHIP 1K 5% 1/10W | |
| R067 | 1-216-049-11 | RES-CHIP 1K 5% 1/10W | |
| R068 | 1-216-041-00 | RES-CHIP 470 5% 1/10W | |
| R105 | 1-216-295-91 | SHORT CHIP 0 | |
| R109 | 1-216-041-00 | RES-CHIP 470 5% 1/10W | |
| R111 | 1-216-025-11 | RES-CHIP 100 5% 1/10W | |

A

| REF NO. | PART NO. | DESCRIPTION | | REMARK | |
|---|---|---|---|---|---|
| R112 | 1-216-025-11 | RES-CHIP | 100 | 5% | 1/10W |
| R113 | 1-216-047-91 | RES-CHIP | 820 | 5% | 1/10W |
| R202 | 1-216-053-00 | RES-CHIP | 1.5K | 5% | 1/10W |
| R203 | 1-216-065-91 | RES-CHIP | 4.7K | 5% | 1/10W |
| R204 | 1-216-069-00 | RES-CHIP | 6.8K | 5% | 1/10W |
| R205 | 1-216-069-00 | RES-CHIP | 6.8K | 5% | 1/10W |
| R206 | 1-216-065-91 | RES-CHIP | 4.7K | 5% | 1/10W |
| R207 | 1-216-053-00 | RES-CHIP | 1.5K | 5% | 1/10W |
| R208 | 1-216-069-00 | RES-CHIP | 6.8K | 5% | 1/10W |
| R209 | 1-216-069-00 | RES-CHIP | 6.8K | 5% | 1/10W |
| R210 | 1-216-029-00 | RES-CHIP | 150 | 5% | 1/10W |
| R212 | 1-216-029-00 | RES-CHIP | 150 | 5% | 1/10W |
| R225 | 1-216-033-00 | RES-CHIP | 220 | 5% | 1/10W |
| R226 | 1-216-033-00 | RES-CHIP | 220 | 5% | 1/10W |
| R227 | 1-216-033-00 | RES-CHIP | 220 | 5% | 1/10W |
| R228 | 1-249-389-11 | CARBON | 4.7 | 5% | 1/4W |
| R229 | 1-216-073-91 | RES-CHIP | 10K | 5% | 1/10W |
| R230 | 1-216-069-00 | RES-CHIP | 6.8K | 5% | 1/10W |
| R231 | 1-216-295-91 | SHORT CHIP | 0 | | |
| R234 | 1-249-389-11 | CARBON | 4.7 | 5% | 1/4W |
| R237 | 1-216-308-00 | RES-CHIP | 4.7 | 5% | 1/10W |
| R238 | 1-216-069-00 | RES-CHIP | 6.8K | 5% | 1/10W |
| R239 | 1-216-069-00 | RES-CHIP | 6.8K | 5% | 1/10W |
| R242 | 1-216-025-11 | RES-CHIP | 100 | 5% | 1/10W |
| R243 | 1-216-025-11 | RES-CHIP | 100 | 5% | 1/10W |
| R246 | 1-216-067-00 | RES-CHIP | 5.6K | 5% | 1/10W |
| R247 | 1-216-067-00 | RES-CHIP | 5.6K | 5% | 1/10W |
| R301 | 1-216-073-91 | RES-CHIP | 10K | 5% | 1/10W |
| R302 | 1-216-295-91 | SHORT CHIP | 0 | | |
| R303 | 1-216-049-11 | RES-CHIP | 1K | 5% | 1/10W |
| R304 | 1-216-073-91 | RES-CHIP | 10K | 5% | 1/10W |
| R305 | 1-216-049-11 | RES-CHIP | 1K | 5% | 1/10W |
| R306 | 1-216-077-91 | RES-CHIP | 15K | 5% | 1/10W |
| R308 | 1-216-025-11 | RES-CHIP | 100 | 5% | 1/10W |
| R309 | 1-216-025-11 | RES-CHIP | 100 | 5% | 1/10W |
| R310 | 1-216-025-11 | RES-CHIP | 100 | 5% | 1/10W |
| R311 | 1-216-041-00 | RES-CHIP | 470 | 5% | 1/10W |
| R312 | 1-216-039-00 | RES-CHIP | 390 | 5% | 1/10W |
| R313 | 1-216-037-00 | RES-CHIP | 330 | 5% | 1/10W |
| R314 | 1-216-083-00 | RES-CHIP | 27K | 5% | 1/10W |
| R316 | 1-216-037-00 | RES-CHIP | 330 | 5% | 1/10W |
| R317 | 1-216-091-00 | RES-CHIP | 56K | 5% | 1/10W |
| R318 | 1-216-039-00 | RES-CHIP | 390 | 5% | 1/10W |
| R319 | 1-216-025-11 | RES-CHIP | 100 | 5% | 1/10W |
| R320 | 1-216-065-91 | RES-CHIP | 4.7K | 5% | 1/10W |
| R321 | 1-216-073-91 | RES-CHIP | 10K | 5% | 1/10W |
| R322 | 1-216-033-00 | RES-CHIP | 220 | 5% | 1/10W |
| R323 | 1-216-053-00 | RES-CHIP | 1.5K | 5% | 1/10W |
| R324 | 1-216-053-00 | RES-CHIP | 1.5K | 5% | 1/10W |
| R325 | 1-216-041-00 | RES-CHIP | 470 | 5% | 1/10W |
| R331 | 1-216-295-91 | SHORT CHIP | 0 | | |
| R332 | 1-216-033-00 | RES-CHIP | 220 | 5% | 1/10W |
| R333 | 1-216-073-91 | RES-CHIP | 10K | 5% | 1/10W |
| R334 | 1-216-127-11 | RES-CHIP | 1.8M | 5% | 1/10W |
| R335 | 1-216-045-00 | RES-CHIP | 680 | 5% | 1/10W |
| R338 | 1-216-033-00 | RES-CHIP | 220 | 5% | 1/10W |
| R340 | 1-216-025-11 | RES-CHIP | 100 | 5% | 1/10W |
| R345 | 1-216-081-00 | RES-CHIP | 22K | 5% | 1/10W |
| R348 | 1-208-806-11 | METAL CHIP | 10K | 0.5% | 1/10W |
| R349 | 1-216-073-91 | RES-CHIP | 10K | 5% | 1/10W |
| R350 | 1-216-061-91 | RES-CHIP | 3.3K | 5% | 1/10W |
| R351 | 1-216-053-00 | RES-CHIP | 1.5K | 5% | 1/10W |

| REF NO. | PART NO. | DESCRIPTION | | REMARK | |
|---|---|---|---|---|---|
| R354 | 1-216-057-00 | RES-CHIP | 2.2K | 5% | 1/10W |
| R355 | 1-216-057-00 | RES-CHIP | 2.2K | 5% | 1/10W |
| R356 | 1-216-057-00 | RES-CHIP | 2.2K | 5% | 1/10W |
| R357 | 1-216-079-00 | RES-CHIP | 18K | 5% | 1/10W |
| R358 | 1-216-049-11 | RES-CHIP | 1K | 5% | 1/10W |
| R359 | 1-216-033-00 | RES-CHIP | 220 | 5% | 1/10W |
| R360 | 1-216-033-00 | RES-CHIP | 220 | 5% | 1/10W |
| R361 | 1-216-073-91 | RES-CHIP | 10K | 5% | 1/10W |
| R362 | 1-216-075-00 | RES-CHIP | 12K | 5% | 1/10W |
| R363 | 1-216-079-00 | RES-CHIP | 18K | 5% | 1/10W |
| R364 | 1-216-295-91 | SHORT CHIP | 0 | | |
| R365 | 1-216-033-00 | RES-CHIP | 220 | 5% | 1/10W |
| R366 | 1-216-073-91 | RES-CHIP | 10K | 5% | 1/10W |
| R367 | 1-216-073-91 | RES-CHIP | 10K | 5% | 1/10W |
| R370 | 1-216-033-00 | RES-CHIP | 220 | 5% | 1/10W |
| R371 | 1-216-083-00 | RES-CHIP | 27K | 5% | 1/10W |
| R372 | 1-216-091-00 | RES-CHIP | 56K | 5% | 1/10W |
| R375 | 1-216-025-11 | RES-CHIP | 100 | 5% | 1/10W |
| R376 | 1-216-081-00 | RES-CHIP | 22K | 5% | 1/10W |
| R377 | 1-216-121-11 | RES-CHIP | 1M | 5% | 1/10W |
| R378 | 1-216-053-00 | RES-CHIP | 1.5K | 5% | 1/10W |
| R379 | 1-218-179-11 | RES-CHIP | 10M | 5% | 1/10W |
| R380 | 1-216-041-00 | RES-CHIP | 470 | 5% | 1/10W |
| R383 | 1-216-049-11 | RES-CHIP | 1K | 5% | 1/10W |
| R384 | 1-216-295-91 | SHORT CHIP | 0 | | |
| R385 | 1-216-033-00 | RES-CHIP | 220 | 5% | 1/10W |
| R391 | 1-216-049-11 | RES-CHIP | 1K | 5% | 1/10W |
| R401 | 1-216-049-11 | RES-CHIP | 1K | 5% | 1/10W |
| R402 | 1-216-073-91 | RES-CHIP | 10K | 5% | 1/10W |
| R403 | 1-216-073-91 | RES-CHIP | 10K | 5% | 1/10W |
| R404 | 1-216-073-91 | RES-CHIP | 10K | 5% | 1/10W |
| R405 | 1-216-049-11 | RES-CHIP | 1K | 5% | 1/10W |
| R406 | 1-216-073-91 | RES-CHIP | 10K | 5% | 1/10W |
| R407 | 1-216-049-11 | RES-CHIP | 1K | 5% | 1/10W |
| R408 | 1-216-049-11 | RES-CHIP | 1K | 5% | 1/10W |
| R409 | 1-216-041-00 | RES-CHIP | 470 | 5% | 1/10W |
| R410 | 1-216-113-00 | RES-CHIP | 470K | 5% | 1/10W |
| R411 | 1-216-113-00 | RES-CHIP | 470K | 5% | 1/10W |
| R412 | 1-216-041-00 | RES-CHIP | 470 | 5% | 1/10W |
| R413 | 1-216-021-00 | RES-CHIP | 68 | 5% | 1/10W |
| R414 | 1-216-113-00 | RES-CHIP | 470K | 5% | 1/10W |
| R415 | 1-216-113-00 | RES-CHIP | 470K | 5% | 1/10W |
| R416 | 1-216-077-91 | RES-CHIP | 15K | 5% | 1/10W |
| R417 | 1-216-077-91 | RES-CHIP | 15K | 5% | 1/10W |
| R418 | 1-216-113-00 | RES-CHIP | 470K | 5% | 1/10W |
| R419 | 1-216-022-00 | RES-CHIP | 75 | 5% | 1/10W |
| R426 | 1-216-033-00 | RES-CHIP | 220 | 5% | 1/10W |
| R505 | 1-216-099-00 | RES-CHIP | 120K | 5% | 1/10W |
| R506 | 1-216-085-91 | RES-CHIP | 33K | 5% | 1/10W |
| R507 | 1-249-389-11 | CARBON | 4.7 | 5% | 1/4W |
| R508 | 1-215-910-00 | METAL OXIDE | 68 | 5% | 3W |
| R509 | 1-215-911-11 | METAL OXIDE | 100 | 5% | 3W |
| R510 | 1-215-885-00 | METAL OXIDE | 68 | 5% | 2W |
| R511 | 1-215-911-11 | METAL OXIDE | 100 | 5% | 3W |
| R516 | 1-216-081-00 | RES-CHIP | 22K | 5% | 1/10W |
| R518 | 1-247-807-31 | CARBON | 100 | 5% | 1/4W |
| R520 | 1-215-445-00 | METAL | 10K | 1% | 1/4W |
| R522 | 1-208-806-11 | METAL CHIP | 10K | 0.5% | 1/10W |
| R523 | 1-249-411-11 | CARBON | 330 | 5% | 1/4W |
| R525 | 1-208-830-11 | METAL CHIP | 100K | 0.5% | 1/10W |
| R526 | 1-208-798-11 | METAL CHIP | 4.7K | 0.5% | 1/10W |

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

**A**

| REF NO. | PART NO. | DESCRIPTION | | REMARK | |
|---|---|---|---|---|---|
| R527 | 1-216-001-00 | RES-CHIP | 10 | 5% | 1/10W |
| R528 | 1-208-814-91 | METAL CHIP | 22K | 0.5% | 1/10W |
| R529 | 1-216-635-11 | METAL CHIP | 220 | 0.5% | 1/10W |
| R531 | 1-247-843-11 | CARBON | 3.3K | 5% | 1/4W |
| R533 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W |
| R534 | 1-216-361-00 | METAL OXIDE | 0.22 | 5% | 2W |
| R535 | 1-216-067-00 | RES-CHIP | 5.6K | 5% | 1/10W |
| R536 | 1-216-067-00 | RES-CHIP | 5.6K | 5% | 1/10W |
| R537 | 1-208-814-91 | METAL CHIP | 22K | 0.5% | 1/10W |
| R540 | 1-216-065-91 | RES-CHIP | 4.7K | 5% | 1/10W |
| R541 | 1-216-065-91 | RES-CHIP | 4.7K | 5% | 1/10W |
| R542 | 1-216-295-91 | SHORT CHIP | 0 | | |
| R543 | 1-216-437-00 | METAL OXIDE | 5.6K | 5% | 1W |
| R544 | 1-215-894-11 | METAL OXIDE | 2.2K | 5% | 2W |
| R545 | 1-216-077-91 | RES-CHIP | 15K | 5% | 1/10W |
| R546 | 1-216-077-91 | RES-CHIP | 15K | 5% | 1/10W |
| R547 | 1-216-085-91 | RES-CHIP | 33K | 5% | 1/10W |
| R549 | 1-215-451-00 | METAL | 18K | 1% | 1/4W |
| R550 | 1-216-097-11 | RES-CHIP | 100K | 5% | 1/10W |
| R551 | 1-249-421-11 | CARBON | 2.2K | 5% | 1/4W |
| R552 | 1-216-057-00 | RES-CHIP | 2.2K | 5% | 1/10W |
| R553 | 1-215-457-00 | METAL | 33K | 1% | 1/4W |
| R554 | 1-215-457-00 | METAL | 33K | 1% | 1/4W |
| R556 | 1-215-437-00 | METAL | 4.7K | 1% | 1/4W |
| R558 | 1-249-421-11 | CARBON | 2.2K | 5% | 1/4W |
| R559 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W |
| R560 | 1-216-073-91 | RES-CHIP | 10K | 5% | 1/10W |
| R562 | 1-249-401-11 | CARBON | 47 | 5% | 1/4W |
| R565 | 1-216-073-91 | RES-CHIP | 10K | 5% | 1/10W |
| R567 | 1-216-105-91 | RES-CHIP | 220K | 5% | 1/10W |
| R569 | 1-249-385-11 | CARBON | 2.2 | 5% | 1/4W |
| R570 | 1-216-069-00 | RES-CHIP | 6.8K | 5% | 1/10W |
| R571 | 1-215-437-00 | METAL | 4.7K | 1% | 1/4W |
| R573 | 1-216-089-91 | RES-CHIP | 47K | 5% | 1/10W |
| R577 | 1-215-888-00 | METAL OXIDE | 220 | 5% | 2W |
| R578 | 1-216-349-00 | METAL OXIDE | 1 | 5% | 1W |
| R579 | 1-216-097-11 | RES-CHIP | 100K | 5% | 1/10W |
| R580 | 1-208-830-11 | METAL CHIP | 100K | 0.5% | 1/10W |
| R581 | 1-208-794-11 | METAL CHIP | 3.3K | 0.5% | 1/10W |
| R582 | 1-208-846-11 | METAL CHIP | 470K | 0.5% | 1/10W |
| R584 | 1-216-295-91 | SHORT CHIP | 0 | | |
| R585 | 1-249-391-11 | CARBON | 6.8 | 5% | 1/4W |
| R587 | 1-208-834-11 | METAL CHIP | 150K | 0.5% | 1/10W |
| R588 | 1-215-888-00 | METAL OXIDE | 220 | 5% | 2W |
| R589 | 1-215-888-00 | METAL OXIDE | 220 | 5% | 2W |
| R590 | 1-215-465-00 | METAL | 68K | 1% | 1/4W |
| R591 | 1-260-288-11 | CARBON | 0.47 | 5% | 1/2W |
| R593 | 1-260-288-11 | CARBON | 0.47 | 5% | 1/2W |
| R594 | 1-260-288-11 | CARBON | 0.47 | 5% | 1/2W |
| R596 | 1-215-921-11 | METAL OXIDE | 4.7K | 5% | 3W |
| R597 | 1-247-750-11 | CARBON | 680 | 5% | 1/2W |
| R598 | 1-249-438-11 | CARBON | 56K | 5% | 1/4W |
| R599 | 1-249-389-11 | CARBON | 4.7 | 5% | 1/4W |
| R600 | 1-249-438-11 | CARBON | 56K | 5% | 1/4W |
| R601 | 1-249-418-11 | CARBON | 1.2K | 5% | 1/4W |
| R602 | 1-249-389-11 | CARBON | 4.7 | 5% | 1/4W |
| R603 | 1-215-485-00 | METAL | 470K | 1% | 1/4W |
| R604 | 1-216-097-11 | RES-CHIP | 100K | 5% | 1/10W |
| R607 | 1-249-425-11 | CARBON | 4.7K | 5% | 1/4W |
| R608 | 1-240-205-91 | METAL | 22M | 5% | 1/2W |
| R609 | 1-216-057-00 | RES-CHIP | 2.2K | 5% | 1/10W |
| R610 | 1-216-073-91 | RES-CHIP | 10K | 5% | 1/10W |

| REF NO. | | PART NO. | DESCRIPTION | | REMARK | |
|---|---|---|---|---|---|---|
| R611 | | 1-216-089-91 | RES-CHIP | 47K | 5% | 1/10W |
| R612 | | 1-216-045-00 | RES-CHIP | 680 | 5% | 1/10W |
| R614 | | 1-216-041-00 | RES-CHIP | 470 | 5% | 1/10W |
| R615 | | 1-216-350-11 | METAL OXIDE | 1.2 | 5% | 1W |
| R616 | | 1-260-302-51 | CARBON | 6.8 | 5% | 1/2W |
| R617 | | 1-247-791-91 | CARBON | 22 | 5% | 1/4W |
| R619 | | 1-260-128-91 | CARBON | 270K | 5% | 1/2W |
| R620 | | 1-215-915-11 | METAL OXIDE | 470 | 5% | 3W |
| R622 | | 1-215-908-00 | METAL OXIDE | 33 | 5% | 3W |
| R623 | | 1-216-095-00 | RES-CHIP | 82K | 5% | 1/10W |
| R624 | | 1-216-089-91 | RES-CHIP | 47K | 5% | 1/10W |
| R626 | | 1-216-049-11 | RES-CHIP | 1K | 5% | 1/10W |
| R627 | | 1-240-251-11 | CEMENTED | 6.8 | 5% | 10W |
| R629 | | 1-247-747-11 | CARBON | 470 | 5% | 1/2W |
| R630 | | 1-249-429-11 | CARBON | 10K | 5% | 1/4W |
| R631 | | 1-216-089-91 | RES-CHIP | 47K | 5% | 1/10W |
| R632 | | 1-202-933-61 | FUSIBLE | 0.1 | 10% | 1/2W |
| R634 | ⚠ | 1-240-917-91 | METAL | 8.2M | 5% | 1W |
| R635 | | 1-216-492-11 | METAL OXIDE | 82K | 5% | 3W |
| R636 | | 1-215-924-00 | METAL OXIDE | 15K | 5% | 3W |
| R637 | | 1-216-492-11 | METAL OXIDE | 82K | 5% | 3W |
| R639 | | 1-216-363-00 | METAL OXIDE | 0.33 | 5% | 2W |
| R640 | | 1-249-415-11 | CARBON | 680 | 5% | 1/4W |
| R641 | | 1-216-362-11 | METAL OXIDE | 0.27 | 5% | 2W |
| R642 | | 1-249-419-11 | CARBON | 1.5K | 5% | 1/4W |
| R643 | | 1-247-843-11 | CARBON | 3.3K | 5% | 1/4W |
| R644 | | 1-249-419-11 | CARBON | 1.5K | 5% | 1/4W |
| R646 | | 1-215-924-00 | METAL OXIDE | 15K | 5% | 3W |
| R647 | | 1-249-401-11 | CARBON | 47 | 5% | 1/4W |
| R648 | | 1-216-057-00 | RES-CHIP | 2.2K | 5% | 1/10W |
| R649 | | 1-249-417-11 | CARBON | 1K | 5% | 1/4W |
| R650 | | 1-215-882-00 | METAL OXIDE | 22 | 5% | 2W |
| R652 | | 1-215-925-11 | METAL OXIDE | 22K | 5% | 3W |
| R653 | | 1-215-873-00 | METAL OXIDE | 4.7K | 5% | 1W |
| R657 | | 1-260-127-11 | CARBON | 220K | 5% | 1/2W |
| R659 | | 1-216-049-11 | RES-CHIP | 1K | 5% | 1/10W |
| R660 | | 1-216-073-91 | RES-CHIP | 10K | 5% | 1/10W |
| R661 | | 1-215-873-00 | METAL OXIDE | 4.7K | 5% | 1W |
| R680 | | 1-216-308-00 | RES-CHIP | 4.7 | 5% | 1/10W |
| R901 | | 1-249-411-11 | CARBON | 330 | 5% | 1/4W |
| R902 | | 1-249-411-11 | CARBON | 330 | 5% | 1/4W |
| R903 | | 1-216-022-00 | RES-CHIP | 75 | 5% | 1/10W |
| R904 | | 1-216-033-00 | RES-CHIP | 220 | 5% | 1/10W |
| R905 | | 1-216-113-00 | RES-CHIP | 470K | 5% | 1/10W |
| R906 | | 1-216-025-11 | RES-CHIP | 100 | 5% | 1/10W |
| R907 | | 1-216-113-00 | RES-CHIP | 470K | 5% | 1/10W |
| R908 | | 1-216-025-11 | RES-CHIP | 100 | 5% | 1/10W |
| R909 | | 1-216-065-91 | RES-CHIP | 4.7K | 5% | 1/10W |
| R910 | | 1-216-065-91 | RES-CHIP | 4.7K | 5% | 1/10W |
| R911 | | 1-216-067-00 | RES-CHIP | 5.6K | 5% | 1/10W |
| R912 | | 1-216-041-00 | RES-CHIP | 470 | 5% | 1/10W |
| R913 | | 1-216-049-11 | RES-CHIP | 1K | 5% | 1/10W |
| R914 | | 1-216-055-00 | RES-CHIP | 1.8K | 5% | 1/10W |
| R915 | | 1-216-061-91 | RES-CHIP | 3.3K | 5% | 1/10W |
| R916 | | 1-216-017-91 | RES-CHIP | 47 | 5% | 1/10W |
| R917 | | 1-216-041-00 | RES-CHIP | 470 | 5% | 1/10W |
| R918 | | 1-216-041-00 | RES-CHIP | 470 | 5% | 1/10W |

<RELAY>

| | | | | | | |
|---|---|---|---|---|---|---|
| RY601 | ⚠ | 1-755-214-11 | RELAY, AC POWER | | | |

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

**A** **C1**

| REF NO. | PART NO. | DESCRIPTION | REMARK |
|---|---|---|---|
| | | <SWITCH> | |
| S502 | 1-572-707-11 | SWITCH, LEVER | |
| S600 | 1-571-433-21 | SWITCH, PUSH (AC POWER) | |
| S901 | 1-692-431-21 | SWITCH, TACTILE | |
| S902 | 1-692-431-21 | SWITCH, TACTILE | |
| S903 | 1-692-431-21 | SWITCH, TACTILE | |
| S904 | 1-692-431-21 | SWITCH, TACTILE | |
| S905 | 1-692-431-21 | SWITCH, TACTILE | |
| S906 | 1-692-431-21 | SWITCH, TACTILE | |
| S907 | 1-692-431-21 | SWITCH, TACTILE | |
| | | <TRANSFORMER> | |
| T501 | 1-437-195-11 | TRANSFORMER, HORIZONTAL DRIVE | |
| T503 | ⚠ 1-453-293-11, | TRANSFORMER ASSY FLYBACK (NX-1748//M3A4) | |
| T601 | 1-424-682-11 | TRANSFORMER, LINE FILTER | |
| T603 | ⚠ 1-433-513-31 | TRANSFORMER, CONVERTER (SRT) | |
| T604 | ⚠ 1-431-852-11 | TRANSFORMER, CONVERTER (SRT) | |
| | | <THERMISTOR> | |
| TH600 | 1-803-586-11 | THERMISTOR, NTC | |
| | | <THERMISTOR> | |
| THP600 | 1-803-951-11 | THERMISTOR, PTC | |
| | | <TUNER> | |
| TU101 | 8-598-449-10 | TUNER, FSS BTF-LG433 | |
| | | <CRYSTAL> | |
| X001 | 1-579-125-11 | VIBRATOR, CERAMIC | |
| X301 | 1-781-134-21 | VIBRATOR, CRYSTAL | |
| X302 | 1-781-132-21 | VIBRATOR, CRYSTAL | |

**********

| | | | |
|---|---|---|---|
| * | A-1332-141-A | C1 BOARD MOUNTED ********** | |
| | 7-682-948-01 | SCREW +PSW 3X8 | |
| | | <CAPACITOR> | |
| C700 | 1-102-074-00 | CERAMIC | 0.001UF 10.00% 50V |
| C701 | 1-126-933-11 | ELECT | 100UF 20.00% 16V |
| C702 | 1-102-114-00 | CERAMIC | 470PF 10.00% 50V |
| C703 | 1-110-389-11 | FILM | 0.1UF 5% 250V |
| C705 | 1-115-350-51 | CERAMIC | 0.0047UF 2KV |
| C706 | 1-130-202-00 | FILM | 0.022UF 5.00% 400V |
| C707 | 1-107-651-11 | ELECT | 4.7UF 20.00% 250V |
| C1803 | 1-126-964-11 | ELECT | 10UF 20.00% 50V |
| C1804 | 1-126-964-11 | ELECT | 10UF 20.00% 50V |
| C1809 | 1-126-942-61 | ELECT | 1000UF 20.00% 25V |
| C5952 | 1-107-616-11 | CERAMIC | 150PF 10.00% 500V |
| C5954 | 1-102-112-00 | CERAMIC | 330PF 10.00% 50V |
| C5955 | 1-126-947-11 | ELECT | 47UF 20.00% 16V |
| C5961 | 1-161-830-00 | CERAMIC | 0.0047UF 500V |
| C5962 | 1-130-491-00 | MYLAR | 0.047UF 5.00% 50V |
| C5963 | 1-107-638-11 | ELECT | 33UF 20.00% 160V |
| C5964 | 1-126-935-11 | ELECT | 470UF 20.00% 10V |
| C5968 | 1-106-383-00 | MYLAR | 0.047UF 10.00% 200V |
| C5969 | 1-107-949-11 | ELECT | 2.2UF 20.00% 160V |
| C5970 | 1-104-999-11 | MYLAR | 0.1UF 10.00% 200V |
| C5972 | 1-126-935-11 | ELECT | 470UF 20.00% 16V |
| C5973 | 1-130-491-00 | MYLAR | 0.047UF 5.00% 50V |
| C5975 | 1-126-935-11 | ELECT | 470UF 20.00% 10V |
| C5978 | 1-130-471-00 | MYLAR | 0.001UF 5.00% 50V |
| C5979 | 1-130-471-00 | MYLAR | 0.001UF 5.00% 50V |
| C5980 | 1-126-947-11 | ELECT | 47UF 20.00% 10V |
| | | <CONNECTOR> | |
| CN700 | 1-695-915-11 | TAB (CONTACT) | |
| CN701 * | 1-564-509-11 | PLUG, CONNECTOR 6P | |
| CN703 | 1-695-915-11 | TAB (CONTACT) | |
| CN706 | 1-564-507-11 | PLUG, CONNECTOR 4P | |
| CN1801 * | 1-564-507-11 | PLUG, CONNECTOR 4P | |
| CN1802 * | 1-564-506-11 | PLUG, CONNECTOR 3P | |
| CN5961 * | 1-564-510-11 | PLUG, CONNECTOR 7P | |
| CN5962 * | 1-564-506-11 | PLUG, CONNECTOR 3P | |
| | | <DIODE> | |
| D704 | 8-719-911-19 | 1SS119-25 | |
| D705 | 8-719-911-19 | 1SS119-25 | |
| D707 | 8-719-051-85 | HSS83TD | |
| D708 | 8-719-051-85 | HSS83TD | |
| D709 | 8-719-051-85 | HSS83TD | |
| D1803 | 8-719-911-19 | 1SS119-25 | |
| D1804 | 8-719-911-19 | 1SS119-25 | |
| D1808 | 8-719-908-03 | GP08D | |
| D5964 | 8-719-911-19 | 1SS119-25 | |
| D5967 | 8-719-110-86 | RD39ES-B | |
| D5968 | 8-719-110-86 | RD39ES-B | |
| | | <IC> | |
| IC700 | 8-759-712-99 | IC TDA6107Q/N2 | |
| IC1800 | 8-759-822-38 | LA6510 | |
| | | <JACK> | |
| J701 | ⚠ 1-540-071-22 | SOCKET, CRT | |
| | | <COIL> | |
| L705 | 1-414-186-31 | INDUCTOR | 33UH |
| L707 | 1-414-186-31 | INDUCTOR | 33UH |
| L708 | 1-410-667-31 | INDUCTOR | 22UH |
| L5961 | 1-414-187-11 | INDUCTOR | 47UH |
| | | <TRANSISTOR> | |
| Q700 | 8-729-119-76 | 2SA1175-HFE | |
| Q1802 | 8-729-119-78 | 2SC2785-HFE | |
| Q1802 | 8-729-230-45 | 2SC2458-YGR | |
| Q5961 | 8-729-423-33 | 2SC3311A-QRSTA | |
| Q5962 | 8-729-423-33 | 2SC3311A-QRSTA | |
| Q5963 | 8-729-017-05 | 2SA1837 | |
| Q5965 | 8-729-017-06 | 2SC4793 | |

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

**C1 F V1**

| REF NO. | PART NO. | DESCRIPTION | | | REMARK |
|---|---|---|---|---|---|
| Q5967 | 8-729-423-33 | 2SC3311A-QRSTA | | | |
| Q5968 | 8-729-119-76 | 2SA1175-HFE | | | |
| | | <RESISTOR> | | | |
| R700 | 1-219-743-11 | METAL | 100 | 5% | 1/2W |
| R703 | 1-247-807-31 | CARBON | 100 | 5% | 1/4W |
| R704 | 1-247-807-31 | CARBON | 100 | 5% | 1/4W |
| R705 | 1-247-807-31 | CARBON | 100 | 5% | 1/4W |
| R709 | 1-219-746-11 | METAL | 1K | 5% | 1/2W |
| R710 | 1-219-746-11 | METAL | 1K | 5% | 1/2W |
| R711 | 1-219-746-11 | METAL | 1K | 5% | 1/2W |
| R712 | 1-219-752-11 | METAL | 100K | 5% | 1/2W |
| R713 | 1-216-399-00 | METAL OXIDE | 6.8 | 5% | 3W |
| R714 | 1-216-380-11 | METAL OXIDE | 8.2 | 5% | 2W |
| R715 | 1-249-401-11 | CARBON | 47 | 5% | 1/4W |
| R716 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W |
| R717 | 1-247-807-31 | CARBON | 100 | 5% | 1/4W |
| R718 | 1-249-428-11 | CARBON | 8.2K | 5% | 1/4W |
| R719 | 1-215-473-00 | METAL | 150K | 1% | 1/4W |
| R720 | 1-215-473-00 | METAL | 150K | 1% | 1/4W |
| R722 | 1-247-891-00 | CARBON | 330K | 5% | 1/4W |
| R1802 | 1-249-382-11 | CARBON | 1.2 | 5% | 1/4W |
| R1803 | 1-249-382-11 | CARBON | 1.2 | 5% | 1/4W |
| R1805 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W |
| R1806 | 1-249-425-11 | CARBON | 4.7K | 5% | 1/4W |
| R1808 | 1-249-425-11 | CARBON | 4.7K | 5% | 1/4W |
| R1809 | 1-249-435-11 | CARBON | 33K | 5% | 1/4W |
| R1810 | 1-249-435-11 | CARBON | 33K | 5% | 1/4W |
| R1811 | 1-249-440-11 | CARBON | 82K | 5% | 1/4W |
| R1812 | 1-249-435-11 | CARBON | 33K | 5% | 1/4W |
| R1821 | 1-249-440-11 | CARBON | 82K | 5% | 1/4W |
| R1822 | 1-249-435-11 | CARBON | 33K | 5% | 1/4W |
| R1823 | 1-249-426-11 | CARBON | 5.6K | 5% | 1/4W |
| R1824 | 1-249-435-11 | CARBON | 33K | 5% | 1/4W |
| R5950 | 1-249-401-11 | CARBON | 47 | 5% | 1/4W |
| R5951 | 1-249-400-11 | CARBON | 39 | 5% | 1/4W |
| R5952 | 1-249-398-11 | CARBON | 27 | 5% | 1/4W |
| R5961 | 1-249-389-11 | CARBON | 4.7 | 5% | 1/4W |
| R5962 | 1-247-807-31 | CARBON | 100 | 5% | 1/4W |
| R5963 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W |
| R5964 | 1-260-312-11 | CARBON | 47 | 5% | 1/2W |
| R5965 | 1-249-414-11 | CARBON | 560 | 5% | 1/4W |
| R5966 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W |
| R5967 | 1-249-410-11 | CARBON | 270 | 5% | 1/4W |
| R5968 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W |
| R5969 | 1-249-383-11 | CARBON | 1.5 | 5% | 1/4W |
| R5971 | 1-249-409-11 | CARBON | 220 | 5% | 1/4W |
| R5972 | 1-249-432-11 | CARBON | 18K | 5% | 1/4W |
| R5973 | 1-249-403-11 | CARBON | 68 | 5% | 1/4W |
| R5974 | 1-216-476-11 | METAL OXIDE | 180 | 5% | 3W |
| R5975 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W |
| R5976 | 1-249-432-11 | CARBON | 18K | 5% | 1/4W |
| R5977 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W |
| R5978 | 1-247-807-31 | CARBON | 100 | 5% | 1/4W |
| R5979 | 1-249-414-11 | CARBON | 560 | 5% | 1/4W |
| R5980 | 1-247-807-31 | CARBON | 100 | 5% | 1/4W |
| R5981 | 1-249-416-11 | CARBON | 820 | 5% | 1/4W |
| R5982 | 1-249-383-11 | CARBON | 1.5 | 5% | 1/4W |
| R5985 | 1-249-401-11 | CARBON | 47 | 5% | 1/4W |
| R5986 | 1-249-397-11 | CARBON | 22 | 5% | 1/4W |

| REF NO. | | PART NO. | DESCRIPTION | | | REMARK |
|---|---|---|---|---|---|---|
| | | | <VARIABLE RESISTOR> | | | |
| RV700 | | 1-241-656-11 | RES, ADJ, METAL FILM 110M | | | |
| | | | <SPARK GAP> | | | |
| SG700 | | 1-519-422-11 | GAP, SPARK | | | |
| SG701 | | 1-519-422-11 | GAP, SPARK | | | |
| SG702 | | 1-519-422-11 | GAP, SPARK | | | |
| ********** | | | | | | |
| | * | A-1241-450-A | F BOARD MOUNTED | | | |
| | | | ********** | | | |
| | | 1-533-223-11 | CLIP, FUSE | | | |
| | | 1-803-830-11 | VARISTOR (ERZV14D621) | | | |
| | | | <CAPACITOR> | | | |
| C654 | ⚠ | 1-117-703-51 | CERAMIC | 0.0047UF | 99% | 250V |
| C4602 | ⚠ | 1-104-708-51 | MYLAR | 0.47UF | 20.00% | 250V |
| | | | <CONNECTOR> | | | |
| CN4601 | * | 1-580-843-11 | PIN, CONNECTOR (POWER) | | | |
| CN4602 | * | 1-580-843-11 | PIN, CONNECTOR (POWER) | | | |
| CN4603 | | 1-695-915-11 | TAB (CONTACT) | | | |
| | | | <FUSE> | | | |
| F4601 | ⚠ | 1-576-016-11 | FUSE, TIME-LAG (BET) 3.15A/250V | | | |
| | | | <RESISTOR> | | | |
| R4601 | ⚠ | 1-202-719-91 | SOLID | 1M | 10% | 1/2W |
| | | | <TRANSFORMER> | | | |
| T4601 | | 1-424-682-11 | TRANSFORMER, LINE FILTER | | | |
| T4602 | | 1-424-682-11 | TRANSFORMER, LINE FILTER | | | |
| ********** | | | | | | |
| | * | A-1300-668-A | V1 BOARD COMPLETE | | | |
| | | | ********** | | | |
| | | | <CAPACITOR> | | | |
| C801 | | 1-126-947-11 | ELECT | 47UF | 20.00% | 16V |
| C805 | | 1-163-038-91 | CERAMIC CHIP | 0.1UF | | 25V |
| C806 | | 1-163-038-91 | CERAMIC CHIP | 0.1UF | | 25V |
| C814 | | 1-163-021-91 | CERAMIC CHIP | 0.01UF | 10.00% | 50V |
| C815 | | 1-163-251-11 | CERAMIC CHIP | 100PF | 5.00% | 50V |
| C816 | | 1-164-505-11 | CERAMIC CHIP | 2.2UF | | 16V |
| C817 | | 1-164-004-11 | CERAMIC CHIP | 0.1UF | 10.00% | 25V |
| C818 | | 1-163-239-11 | CERAMIC CHIP | 33PF | 5.00% | 50V |
| C820 | | 1-163-239-11 | CERAMIC CHIP | 33PF | 5.00% | 50V |
| C821 | | 1-163-038-91 | CERAMIC CHIP | 0.1UF | | 25V |

V1

| REF NO. | | PART NO. | DESCRIPTION | | | REMARK |
|---|---|---|---|---|---|---|
| C822 | | 1-163-009-91 | CERAMIC CHIP | 0.001UF | 10.00% | 50V |
| C823 | | 1-126-933-11 | ELECT | 100UF | 20.00% | 16V |
| C826 | | 1-126-963-11 | ELECT | 4.7UF | 20.00% | 50V |
| C829 | | 1-163-247-91 | CERAMIC CHIP | 68PF | 5.00% | 50V |
| C830 | | 1-163-038-91 | CERAMIC CHIP | 0.1UF | | 25V |
| C831 | | 1-126-933-11 | ELECT | 100UF | 20.00% | 16V |
| C832 | | 1-126-964-11 | ELECT | 10UF | 20.00% | 50V |
| C835 | | 1-163-038-91 | CERAMIC CHIP | 0.1UF | | 25V |
| C837 | | 1-126-933-11 | ELECT | 100UF | 20.00% | 16V |
| | | | <CONNECTOR> | | | |
| CN801 | * | 1-774-812-11 | CONNECTOR, BOARD TO BOARD 7P | | | |
| CN803 | * | 1-774-812-11 | CONNECTOR, BOARD TO BOARD 7P | | | |
| | | | <DIODE> | | | |
| D802 | | 8-719-941-09 | DAP202U | | | |
| D803 | | 8-719-105-46 | RD3.3M-B2 | | | |
| D804 | | 8-719-105-91 | RD5.6M-B2 | | | |
| | | | <FERRITE BEAD> | | | |
| FB801 | | 1-410-397-21 | FERRITE | 1.1UH | | |
| FB802 | | 1-410-397-21 | FERRITE | 1.1UH | | |
| FB803 | | 1-410-397-21 | FERRITE | 1.1UH | | |
| FB804 | | 1-414-223-11 | INDUCTOR | 470UH | | |
| FB805 | | 1-410-397-21 | FERRITE | 1.1UH | | |
| | | | <IC> | | | |
| IC801 | | 8-759-657-29 | IC SAA5261PS/110 | | | |
| | | | <CHIP CONDUCTOR> | | | |
| JR800 | | 1-216-295-91 | SHORT CHIP | 0 | | |
| JR801 | | 1-216-295-91 | SHORT CHIP | 0 | | |
| JR802 | | 1-216-295-91 | SHORT CHIP | 0 | | |
| JR804 | | 1-216-295-91 | SHORT CHIP | 0 | | |
| JR805 | | 1-216-295-91 | SHORT CHIP | 0 | | |
| | | | <TRANSISTOR> | | | |
| Q801 | | 8-729-120-28 | 2SC1623-L5L6 | | | |
| Q803 | | 8-729-120-28 | 2SC1623-L5L6 | | | |
| Q805 | | 8-729-120-28 | 2SC1623-L5L6 | | | |
| Q806 | | 8-729-120-28 | 2SC1623-L5L6 | | | |
| Q807 | | 8-729-120-28 | 2SC1623-L5L6 | | | |
| Q808 | | 8-729-120-28 | 2SC1623-L5L6 | | | |
| Q810 | | 8-729-120-28 | 2SC1623-L5L6 | | | |
| Q811 | | 8-729-019-01 | 2SD2394-EF | | | |
| Q817 | | 8-729-421-22 | UN2211 | | | |
| | | | <RESISTOR> | | | |
| R800 | | 1-208-806-11 | METAL CHIP | 10K | 0.5% | 1/10W |
| R801 | | 1-216-295-91 | SHORT CHIP | 0 | | |
| R802 | | 1-216-025-11 | RES-CHIP | 100 | 5% | 1/10W |
| R803 | | 1-216-295-91 | SHORT CHIP | 0 | | |
| R804 | | 1-216-295-91 | SHORT CHIP | 0 | | |
| R805 | | 1-216-295-91 | SHORT CHIP | 0 | | |
| R807 | | 1-216-295-91 | SHORT CHIP | 0 | | |

| REF NO. | PART NO. | DESCRIPTION | | | REMARK |
|---|---|---|---|---|---|
| R813 | 1-216-295-91 | SHORT CHIP | 0 | | |
| R820 | 1-216-073-91 | RES-CHIP | 10K | 5% | 1/10W |
| R821 | 1-216-083-00 | RES-CHIP | 27K | 5% | 1/10W |
| R822 | 1-216-025-11 | RES-CHIP | 100 | 5% | 1/10W |
| R824 | 1-216-295-91 | SHORT CHIP | 0 | | |
| R825 | 1-216-295-91 | SHORT CHIP | 0 | | |
| R827 | 1-216-295-91 | SHORT CHIP | 0 | | |
| R828 | 1-216-025-11 | RES-CHIP | 100 | 5% | 1/10W |
| R829 | 1-216-025-11 | RES-CHIP | 100 | 5% | 1/10W |
| R830 | 1-216-295-91 | SHORT CHIP | 0 | | |
| R831 | 1-216-295-91 | SHORT CHIP | 0 | | |
| R832 | 1-208-790-11 | METAL CHIP | 2.2K | 0.5% | 1/10W |
| R835 | 1-216-295-91 | SHORT CHIP | 0 | | |
| R839 | 1-216-655-11 | METAL CHIP | 1.5K | 0.5% | 1/10W |
| R841 | 1-216-025-11 | RES-CHIP | 100 | 5% | 1/10W |
| R842 | 1-216-065-91 | RES-CHIP | 4.7K | 5% | 1/10W |
| R843 | 1-216-065-91 | RES-CHIP | 4.7K | 5% | 1/10W |
| R844 | 1-216-057-00 | RES-CHIP | 2.2K | 5% | 1/10W |
| R845 | 1-216-049-11 | RES-CHIP | 1K | 5% | 1/10W |
| R846 | 1-216-049-11 | RES-CHIP | 1K | 5% | 1/10W |
| R847 | 1-216-049-11 | RES-CHIP | 1K | 5% | 1/10W |
| R848 | 1-216-049-11 | RES-CHIP | 1K | 5% | 1/10W |
| R849 | 1-216-049-11 | RES-CHIP | 1K | 5% | 1/10W |
| R850 | 1-216-105-91 | RES-CHIP | 220K | 5% | 1/10W |
| R851 | 1-216-057-00 | RES-CHIP | 2.2K | 5% | 1/10W |
| R853 | 1-216-067-00 | RES-CHIP | 5.6K | 5% | 1/10W |
| R857 | 1-216-077-91 | RES-CHIP | 15K | 5% | 1/10W |
| R861 | 1-216-049-11 | RES-CHIP | 1K | 5% | 1/10W |
| R862 | 1-260-095-11 | CARBON | 470 | 5% | 1/2W |
| R863 | 1-216-049-11 | RES-CHIP | 1K | 5% | 1/10W |
| R864 | 1-216-041-00 | RES-CHIP | 470 | 5% | 1/10W |
| R866 | 1-215-880-00 | METAL OXIDE | 10 | 5% | 2W |
| R871 | 1-216-037-00 | RES-CHIP | 330 | 5% | 1/10W |
| R879 | 1-216-073-91 | RES-CHIP | 10K | 5% | 1/10W |
| R880 | 1-216-041-00 | RES-CHIP | 470 | 5% | 1/10W |
| R882 | 1-216-049-11 | RES-CHIP | 1K | 5% | 1/10W |
| R884 | 1-216-025-11 | RES-CHIP | 100 | 5% | 1/10W |
| | | <CRYSTAL> | | | |
| X801 | 1-578-774-11 | VIBRATOR, CRYSTAL | | | |

**********

ACCESSORIES AND PACKING MATERIALS
**********

| | | |
|---|---|---|
| | 1-569-008-21 | ADAPTOR, CONVERSION 2P |
| | 3-701-910-00 | SCREW, SPECIAL (DIA. 3.8X20) |
| * | 4-039-372-01 | BAG, PROTECTION |
| * | 4-077-934-02 | INDIVIDUAL CARTON |
| * | 4-081-375-01 | CUSHION (UPPER) (ASSY) |
| * | 4-081-376-01 | CUSHION (LOWER) (ASSY) |
| | 4-080-391-24 | MANUAL INSTRUCTION |
| | 4-392-003-11 | BAND, HOLD |
| | 4-392-004-11 | CLIP |

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The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

| REF NO. | PART NO. | DESCRIPTION | REMARK |
|---|---|---|---|
| | | BATTERY COVER REMOTE COMMANDER | |
| | | ********** | |
| | 1-418-163-12 | REMOTE COMMANDER (RM-952) | |
| | 9-939-697-01 | BATTERY COVER REMOTE COMMANDER | |

| REF NO. | PART NO. | DESCRIPTION | REMARK |
|---|---|---|---|

**Sony Corporation**
**Sony Technology Malaysia Sdn. Bhd.**
**Visual Products**

**9-872-331-01**

**English**
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